

6799



**U.S. Army  
Environmental  
Center**

**FINAL**  
**BIOTA SAMPLING**  
**WOODBRIDGE RESEARCH FACILITY**

**WOODBRIDGE RESEARCH FACILITY, VIRGINIA**

**AUGUST 1995**

**Prepared For:**

**U.S. Army Environmental Center  
Aberdeen Proving Ground, Maryland 21010**

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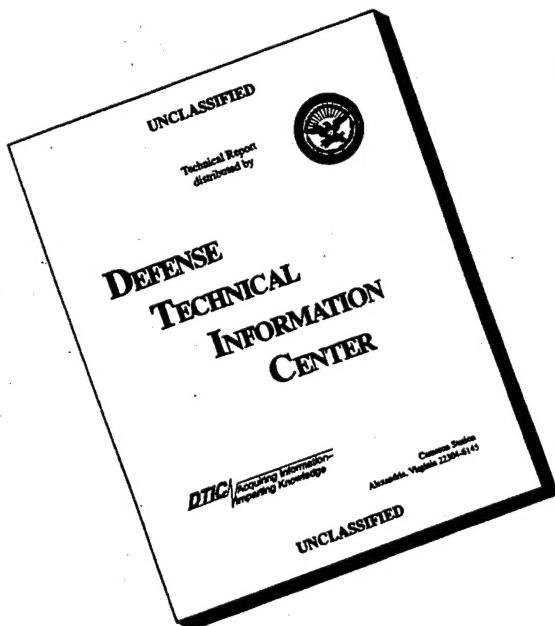
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# **SECTION 1.0**

## **INTRODUCTION**

**T**he U.S. Army Environmental Center (USAEC), Aberdeen Proving Ground, Maryland, directed EARTH TECH to complete a biota sampling at the Woodbridge Research Facility (WRF) installation. This sampling was conducted as part of the U.S. Army Installation Restoration Program (IRP) with all specific activities and project responsibilities as defined in contract number DAAA15-91-D-0009, Delivery Order 0014. Project-specific administration and technical supervision of this delivery order are provided by USAEC-Base Closure Division.

A Site Inspection (SI) was conducted to characterize and evaluate potentially contaminated sites at WRF. The SI identified several data gaps which included the lack of information on potential human health risks from the consumption of fish and on the potential for contaminants found at the study areas to impact aquatic life.

EARTH TECH was contracted to collect, store, and deliver biota samples from the waters on and surrounding WRF. The samples will be analyzed and included in a risk assessment under a separate contract. Guidance documents from the Virginia Department of Environmental Quality (VDEQ) were followed to conduct this sampling (VDEQ, 1994).

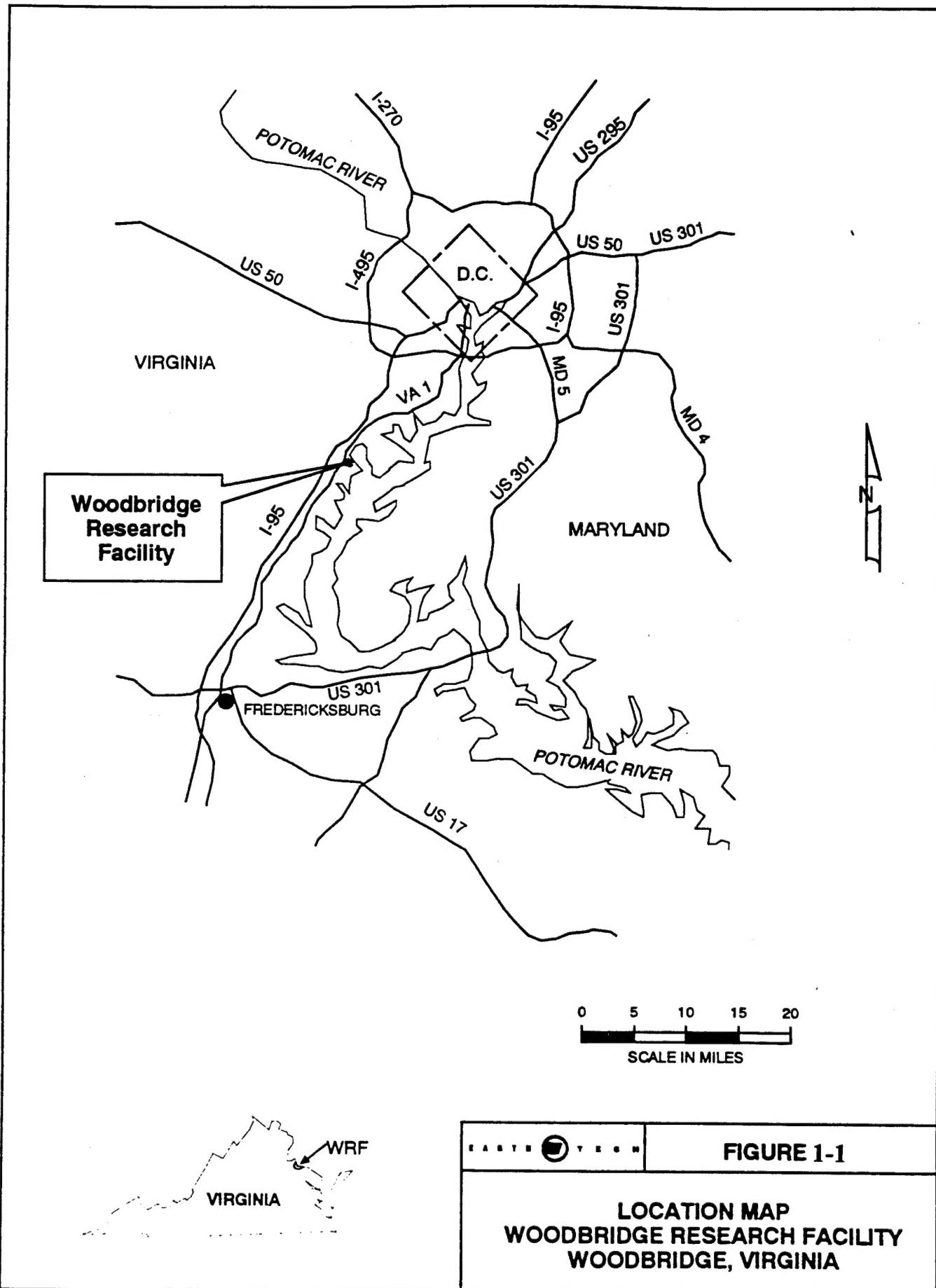
WRF occupies approximately 579 acres of land in the town of Woodbridge in the easternmost portion of Prince William County, Virginia. The facility is located 22 miles southwest of Washington, D.C., as shown in Figure 1-1. Occoquan and Belmont Bays border WRF on the south and east respectively. Marumsco Creek, which is part of Marumsco National Wildlife Refuge, bounds the facility on the west side. Other surface features on the WRF property include a drainage ditch and a pond. The entrance to WRF is located on Dawson Beach Road, east of U.S. Route 1 in Woodbridge. Residential, commercial, and industrial areas are located north of the WRF. A facility location map is provided as Figure 1-2.

The biota sampling included fish sampling at 3 locations and live clam box sampling at 8 locations on and surrounding WRF (Figure 1-3). The fish samples were collected with nets, seines, and electro-fishing gear. The fish samples were collected from 8 November 1994 through 10 November 1994. The live clam box sampling was conducted from 10 October 1994 to 6 December 1994. All samples have been stored since the time of collection at -20°C.

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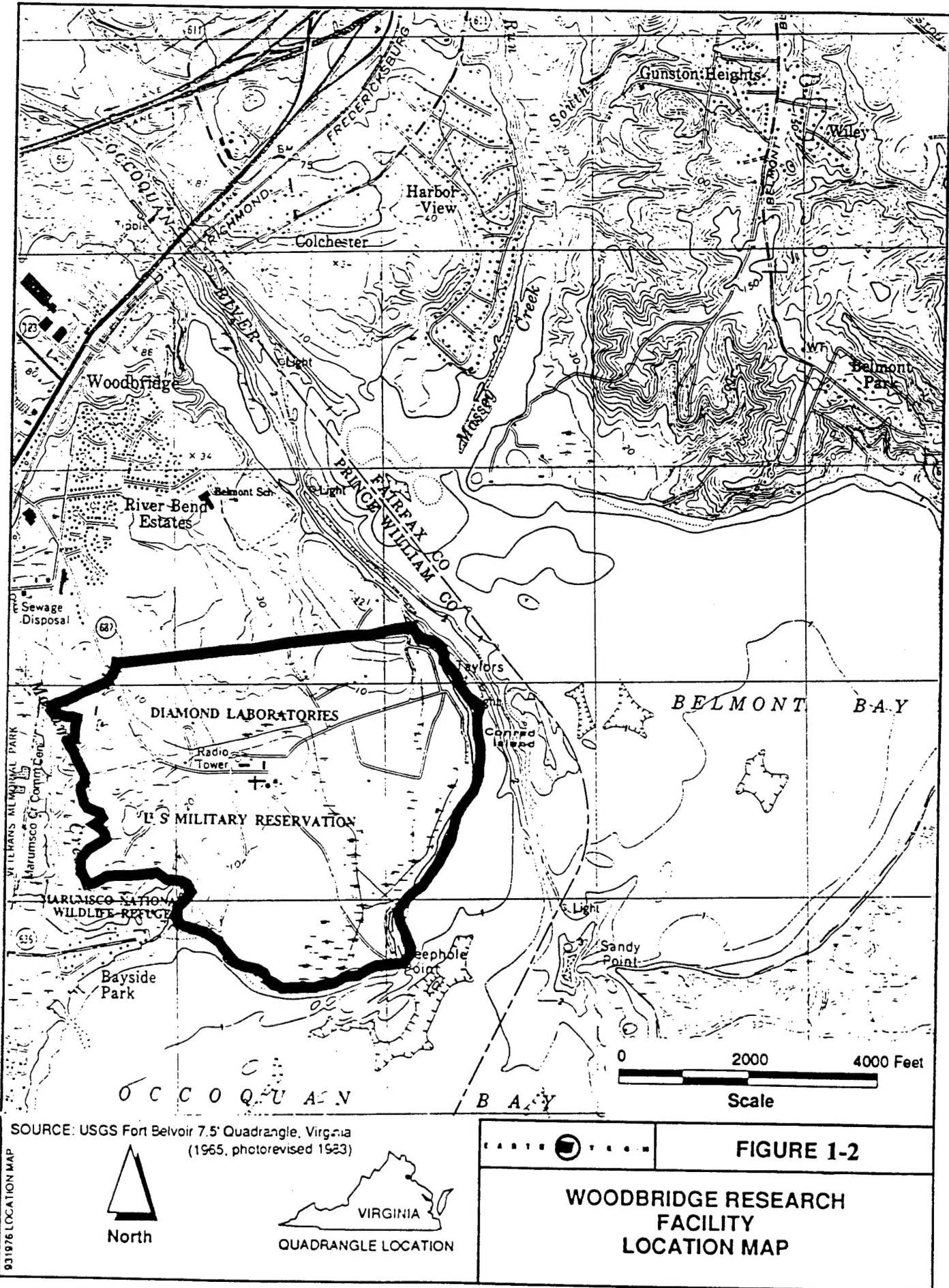
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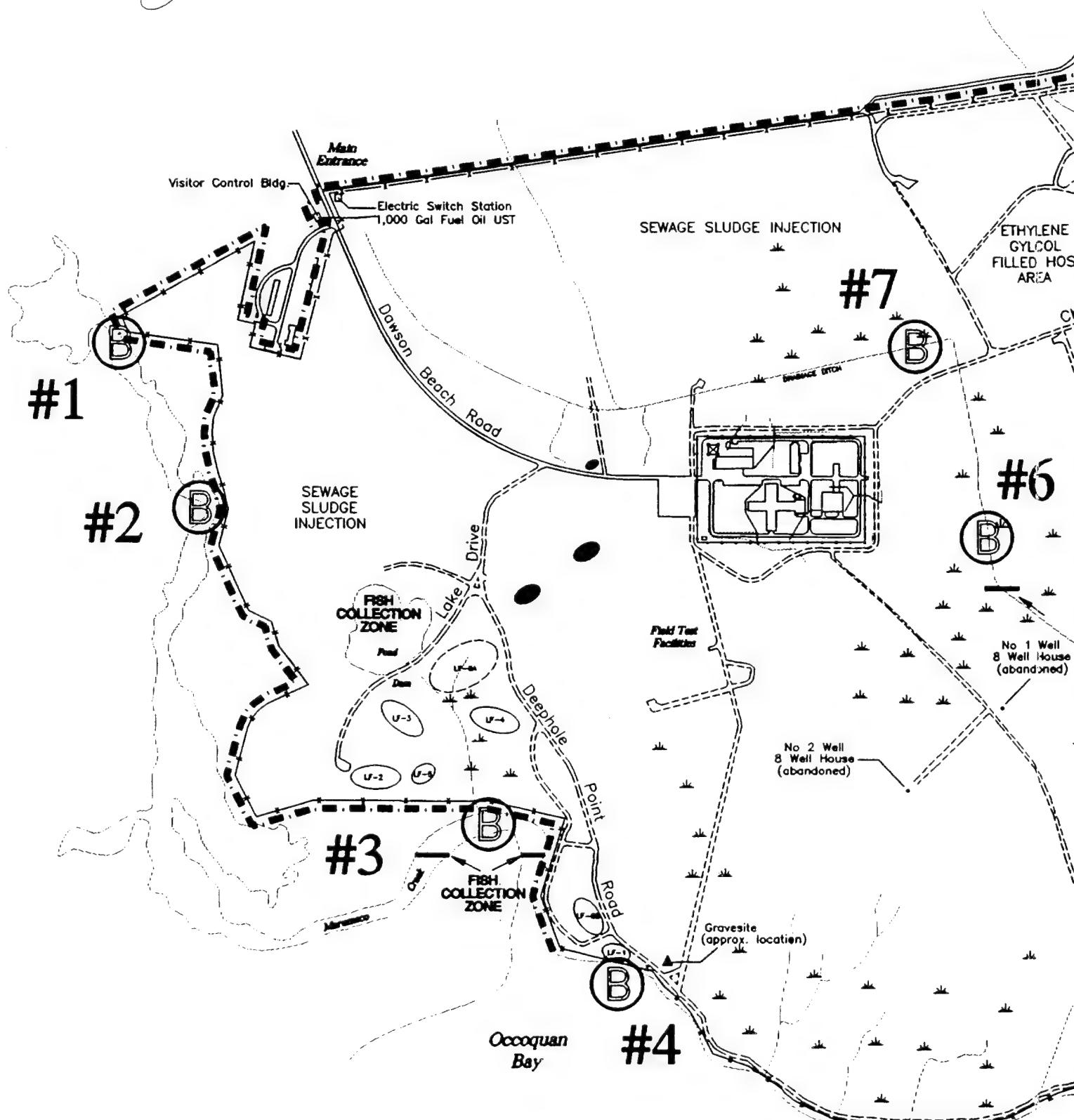
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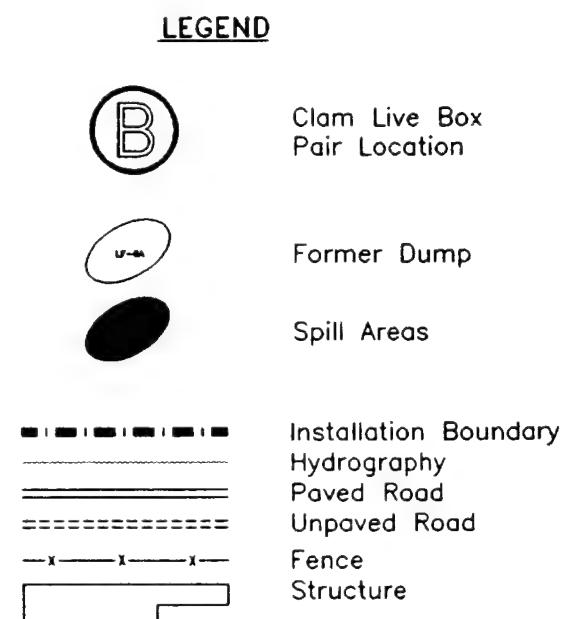
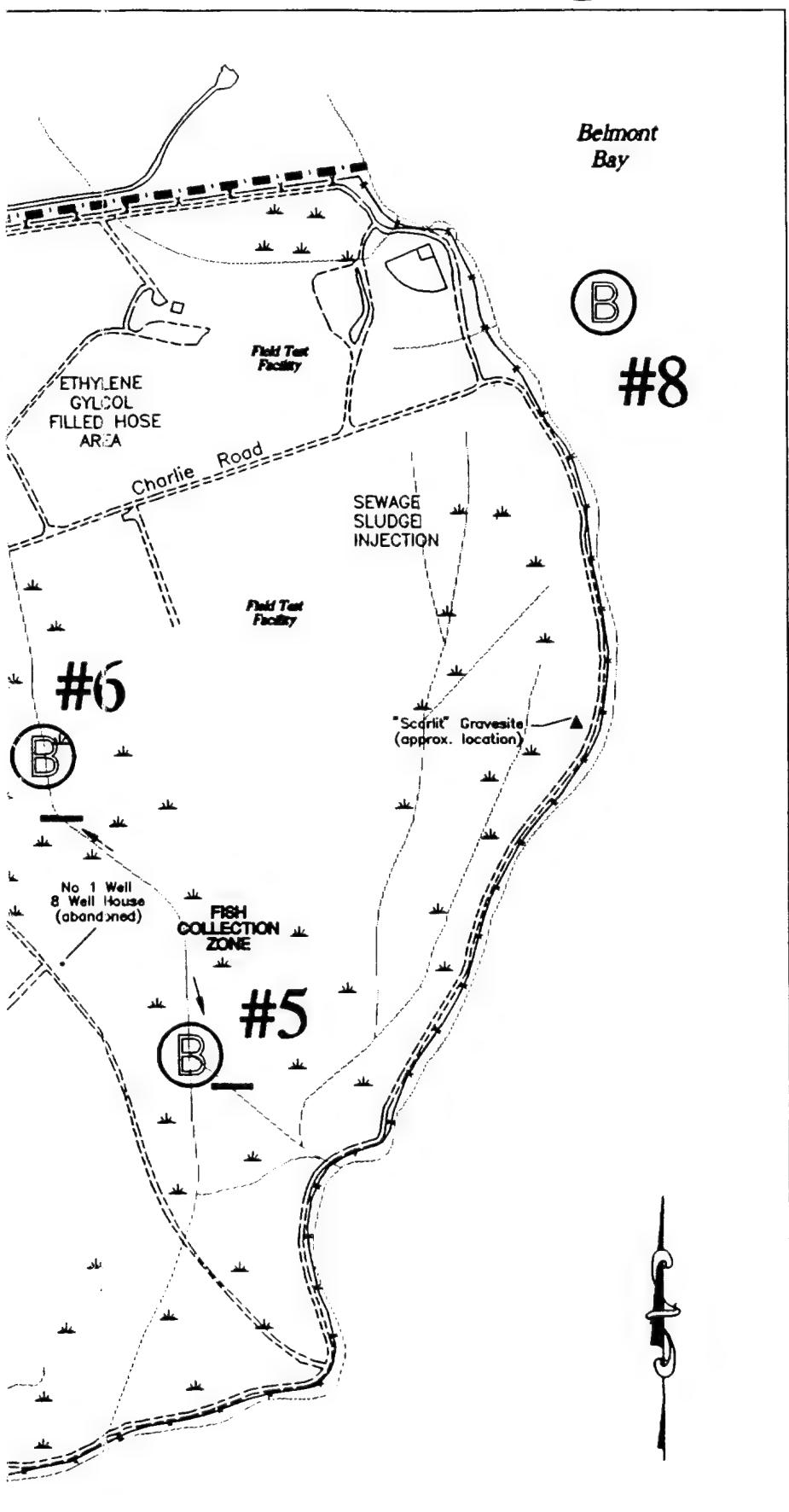


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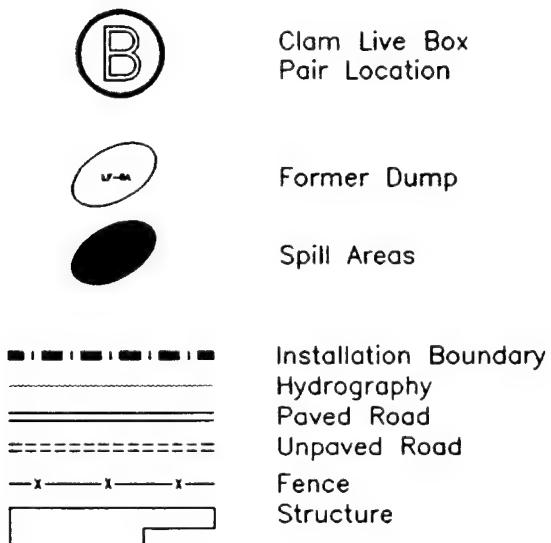
SCALE  
0 700 FT

**Figure 1-3**

**Biota Sampling Locations**  
**Woodbridge Research Facility**  
**Woodbridge, Virginia**

(3)

LEGEND



SCALE  
0 700 FT

**Figure 1-3**

**Biota Sampling Locations  
Woodbridge Research Facility  
Woodbridge, Virginia**

E A R T H      T E C H



Alexandria, Virginia

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The methods of collection, processing, and storage for each of these activities will be described in this report. Location descriptions will also be provided. Field notes and a photo log are provided in Appendices A and B, respectively.

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# **SECTION 2.0**

## **LIVE CLAM BOX SAMPLING**

**T**his section provides the purpose, location descriptions, and sampling procedures for the live clam boxes.

### **2.1 PURPOSE AND DESCRIPTION OF SAMPLING**

Live boxes containing wedge clams (*Rangia cuneata*) were deployed in 8 locations on and surrounding WRF. Two live boxes were placed in each location on 10 October 1994. Boxes were sampled every two weeks for 8 weeks. Each live box contained 250 clams. The clams were obtained from Dr. Eugene Maurakis, Director of St. Paul's College Aquaculture Program.

The purpose of the sampling to provide biota tissue for analysis of contaminants of concern. The locations were selected to assess background bioconcentration potentials and bioconcentration potentials in areas potentially impacted by WRF areas requiring environmental evaluation (AREEs). Live box tissue contaminant data can be used, in conjunction with indigenous tissue sample contaminant data, in the risk assessment analyses to determine the human health risk associated with the consumption of fish and shellfish.

### **2.2 LOCATION DESCRIPTIONS**

The 16 live boxes were deployed in 8 locations. These locations are listed below and are shown on Figure 1-3.

1. Marumsco Creek, upstream of WRF
2. Marumsco Creek, adjacent to the western sewage sludge injection area
3. Marumsco Creek near Former Dump 2
4. Occoquan Bay near Former Dump 1
5. Drainage Ditch just upstream of the Occoquan Bay
6. Drainage Ditch downstream of the Main Compound in the area known as the beaver pond
7. Drainage Ditch upstream of the Main Compound
8. Belmont Bay, 150 feet from the shoreline.

Each of the locations is shown in Appendix B, the photo log.

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### **2.3 SAMPLE COLLECTION, PROCESSING, AND STORAGE PROCEDURES**

Live boxes were sampled every two weeks. Prior to deployment, 40 clams were collected as a control sample. At each sample collection event, the dead clams were removed and shucked. The tissue was wrapped in aluminum foil, dull side toward the sample, placed in heavy duty freezer bags, and frozen at -20°C. Twenty live clams were collected from each box, if practical. In some cases, only 10 live clams were collected due to high mortality rates. Table 2-1 provides the sample collection summary from each live box at all 8 locations. Live clams were wrapped with the shell in aluminum foil, dull side toward the sample, placed in heavy duty freezer bags, and frozen at -20°C. The clams from each box at a location per sampling event were composited into one sample. The samples were labeled with the date, sample location, and status of the clams (live or dead). Aquatic Systems Corporation (ASC) personnel assisted in sample preparation and recovery. ASC personnel transported the preserved samples to the ASC laboratory for temporary storage. The samples were delivered to ESE via Federal Express in May 1995. A copy of the Federal Express airbill along with copies of the chain-of-custody forms which accompanied the biota samples is contained in Appendix D.

The following parameters were determined in the field at each location during each sampling event.

- Dissolved Oxygen
- Temperature
- pH
- Conductivity
- Hardness

These parameters are reported in Table 2-2.

**TABLE 2-1**  
**SUMMARY OF CLAM SAMPLING**

Location	Live Box	Initial Count	Sampling Period: October 24 - October 25				Sampling Period: November 7			
			Number Dead	Number Live	Number Sampled	Number Remaining	Number Dead	Number Live	Number Sampled	Number Remaining
1	A	256	170	86	10	76	55	21	10	11
1	B	242	169	73	10	63	29	34	10	24
2	A	253	198	55	10	45	1	44	10	34
2	B	250	6	244	20	224	4	220	20	200
3	A	260	22	238	20	218	4	214	20	194
3	B	273	35	238	20	218	2	216	20	196
4	A	246	33	213	20	193	1	192	20	172
4	B	248	37	211	20	191	3	188	20	168
5	A	247	180	67	10	57	3	54	10	44
5	B	247	62	185	20	165	4	161	20	141
6	A	250	226	24	10	14	12	2 <sup>(1)</sup>	0	0
6	B	250	191	59	10	49	23	26 <sup>(1)</sup>	10	18
7	A	250	250	0	0	0	0	0	0	0
7	B	250	250	0	0	0	0	0	0	0
8	A	246	84	162	20	142	12	130	20	110
8	B	248	119	129	20	109	11	98	20	78

**TABLE 2-1**  
**SUMMARY OF CLAM SAMPLING**

**Continued**

Location	Live Box	Number Remaining <sup>(1)</sup>	Sampling Period: November 21 - November 22			Sampling Period: December 5 - December 6				
			Number Dead	Number Live	Number Sampled	Number Remaining	Number Dead	Number Live	Number Sampled	Number Remaining <sup>(4)</sup>
1	A	11	9	2	2 <sup>(2)</sup>	0	0	0	0	0
1	B	24	14	10	10 <sup>(2)</sup>	0	0	0	0	0
2	A	34	4	30	10	20	3	17	17	0
2	B	200	20	180	20	160	9	151	20	131
3	A	194	1	193	20	173	0	173	20	153
3	B	196	1	195	20	175	1	174	20	154
4	A	172	1	171	20	151	0	151	20	131
4	B	168	1	167	20	147	1	146	20	126
5	A	44	1	43	20	23	2	21	21	0
5	B	141	2	139	20	119	6	113	20	93
6	A	0	0	0	0	0	0	0	0	0
6	B	18	15	3	3	0	0	0	0	0
7	A	0	0	0	0	0	0	0	0	0
7	B	0	0	0	0	0	0	0	0	0
8	A	110	0	110	20	90	0	90	20	70
8	B	78	1	77	20	57	1	56	20	36

(1) The 2 live clams remaining in basket "A" at Location 6 after the dead clams were collected during the second sampling period (November 7) were added to basket "B" due to the 2 remaining live clams in basket "A" not having enough tissue for a sample.

(2) The live clams collected during the third sampling period (November 21 - November 22) at Location 1 from baskets "A" and "B" were combined into one sample due to not enough tissue for 2 separate samples.

(3) Number remaining refers to number remaining after second sampling period (November 7).

(4) Clams remaining after fourth sampling period (December 5 - December 6) were considered waste.

**TABLE 2-2**  
**WATER QUALITY DATA**

October 9, 1994

Location	Temperature (°C)	pH	Cond	D.O.	Hardness	Time
1	17.8	5.5	240	6.4	60	1230
2	20.7	6.6	270	9.4	100	1320
3	21.5	7.8	270	11.1	80	1440
4	20.9	7.5	300	10.8	100	1415
5	23.0	6.1	260	8.6	100	1750
6	19.9	5.7	130	8.1	40	1650
7	19.9	5.5	130	5.2	20	1625
8	20.6	7.7	250	9.6	80	1840
Clam Holding Area	19.7	7.5	260	10.5	100	1100

October 24-25, 1994

Location	Temperature (°C)	pH	Cond	D.O.	Hardness	Time
1	16.8	6.3	160	4.1	80	1535
2	18.5	6.5	160	7.4	60	1450
3	18.5	6.9	210	10.6	100	1420
4	18.0	7.6	220	12.2	100	1400
5	13.0	5.7	240	5.6	100	0900
6	14.5	6.0	130	6.7	60	1035
7	16.5	5.3	120	1.0	40	0940
8	18.0	7.5	240	12.6	120	1249

November 7-8, 1994

Location	Temperature (°C)	pH	Cond	D.O.	Hardness	Time
1	14.0	6.0	220	6.5	80	1430
2	16.0	6.0	240	7.1	60	1400
3	16.0	6.4	380	9.4	120	1300
4	16.0	7.5	430	10.5	120	1225
5	17.0	6.3	320	11.3	100	1630
6	17.0	6.1	180	4.1	40	1535
7	8.0	5.1	140	2.8	40	0830
8	15.0	6.8	340	11.7	120	1130
Pond	14.0	4.7	50	9.4	20	0845

**TABLE 2-2**  
**WATER QUALITY DATA**

November 21-22, 1994

Location	Temperature (°C)	pH	Cond	D.O.	Hardness	Time
1	14.0	6.2	120	6.9	80	1545
2	14.0	6.1	80	6.8	60	1620
3	13.0	6.1	140	8.8	100	1500
4	13.0	6.6	200	10.6	140	1430
5	10.0	6.3	520	8.3	120	0910
6	11.0	6.1	380	8.4	100	0930
7	9.5	5.3	180	3.1	60	0920
8	12.0	6.8	500	10.3	120	0830

December 5-6, 1994

Location	Temperature (°C)	pH	Cond	D.O.	Hardness	Time
1	15.0	6.0	200	7.2	100	1615
2	14.0	5.75	180	6.5	60	1600
3	14.0	5.6	290	7.9	80	1425
4	13.0	5.5	300	7.8	100	1410
5	10.5	6.5	940	8.5	240	0905
6	10.5	5.4	230	5.4	--	1520
7	14.0	5.1	140	7.5	--	1530
8	10.0	6.7	900	10.6	240	0830

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# **SECTION 3.0**

## **FISH COLLECTION**

**T**his section provides the purpose, location descriptions, and sampling procedures for the fish collection.

### **3.1 PURPOSE AND DESCRIPTION OF FISH COLLECTION**

The objective of studying contaminant levels in indigenous fish tissues is to assess risk associated with the ingestion of contaminated tissues. Sampling of indigenous fish tissues provides data for determining a reasonable maximum exposure value for use in risk assessment algorithms.

Fish were collected from 3 locations on and surrounding WRF. The fish collection was conducted from 8 November 1994 through 10 November 1994. A fishing permit, Permit No. SCP94116, was obtained on 31 October 1994 (see Appendix D). Collection focused on bottom oriented fish, pelagic fish, and game fish. U.S. Environmental Protection Agency (USEPA) guidance on fish sampling and analysis recommends that the smallest fish in the sample be no less than 75 percent of the length of the largest fish in the sample. Samples that did not meet the size requirements were released.

### **3.2 LOCATION DESCRIPTIONS**

Fish were collected from the lower portions of Marumsco Creek, the drainage ditch downstream from the Main Compound, and the pond. Locations are shown on Figure 1-3 and in Appendix B, the photo log.

### **3.3 SAMPLE COLLECTION, PROCESSING, AND STORAGE PROCEDURES**

Samples were collected at all 3 locations over the three day period. The fish were collected using electro-fishing, gill netting, and seining. Five individuals per species were allowed per location. If individuals of a certain species were not large enough to yield 50 grams of fillet tissue, composite samples were allowed.

At the pond, 8 largemouth bass, 10 bluegill, 4 channel catfish, and 10 white perch were collected. Three of the largemouth bass were released due to size and number limitations.

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Ten white perch, 10 bluegill, 1 black crappie, 2 common carp, and 7 yellow perch were collected from Marumsco Creek. None of the measured fish were released.

Three common carp, 10 bluegill, 10 black crappie, 10 american eel, and 8 large mouth bass were collected from the drainage ditch. Two of the large mouth bass and 1 american eel were released due to size and number limitations.

All the samples were measured and recorded in the field notes (Appendix A). All samples were wrapped whole in aluminum foil, dull side toward the sample, and placed in heavy duty freezer bags by species and location. The samples were labeled with species, sample number, location, and collection date. The samples were stored on ice during transport to the storage facility and then frozen at -20°C.

Samples were delivered to ESE in May 1995. ESE is responsible for processing and analyzing the samples.

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# **A P P E N D I X   A**

**FIELD NOTES**

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# A-1

# AQUATIC SYSTEMS

# FIELD NOTES

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10-8-94

WEATHER COND: CLEAR MID 70'S

0600 LEFT Pittsburgh

1230 ARRIVED AT WOODBRIDGE FACILITY

SITE RECONNAISSANCE OF ALL SANDING LOCATIONS - CLEAR CUT BRUSH TO OBTAIN EASIER ACCESS.

1700 ARRIVED AT HOTEL ROOM

---

10-9-94

WEATHER COND: CLEAR, MID 70'S

0930 ARRIVED AT WOODBRIDGE FACILITY

1040 Dr. Naurakis ARRIVED with Clams

1100 DISTRIBUTING Clams into BASKETS  
AT GATE AT END OF Charlie ROAD

WATER ITEMS

TEMP : 19.7 °C

COND : 260

pH : 7.5

HARDNESS : Clam DISTRIBUTING ARE  
DO : 10.5 ppm

1130 PLACED WEDGE MUSSELS (250) INTO 16  
BOXES.

SAMPLED 40 CLAMS FOR CONTROL - ASC  
WILL MAINTAIN AT LAB FROZEN.

1200 BEGAN BASKET Deployment

BASKETS WERE MARKED TO IDENTIFY  
BASKET A FROM B AT EACH LOCATION

BASKET A HAS A CABLE TIE ON THE  
CENTER OF THE LID OF BASKET



BASKET B - HAS NO CABLE TIE

Location

10-9-94

12:30 Time

TEMP : 17.8

DEPT - APPROX 5'

pH : 5.5

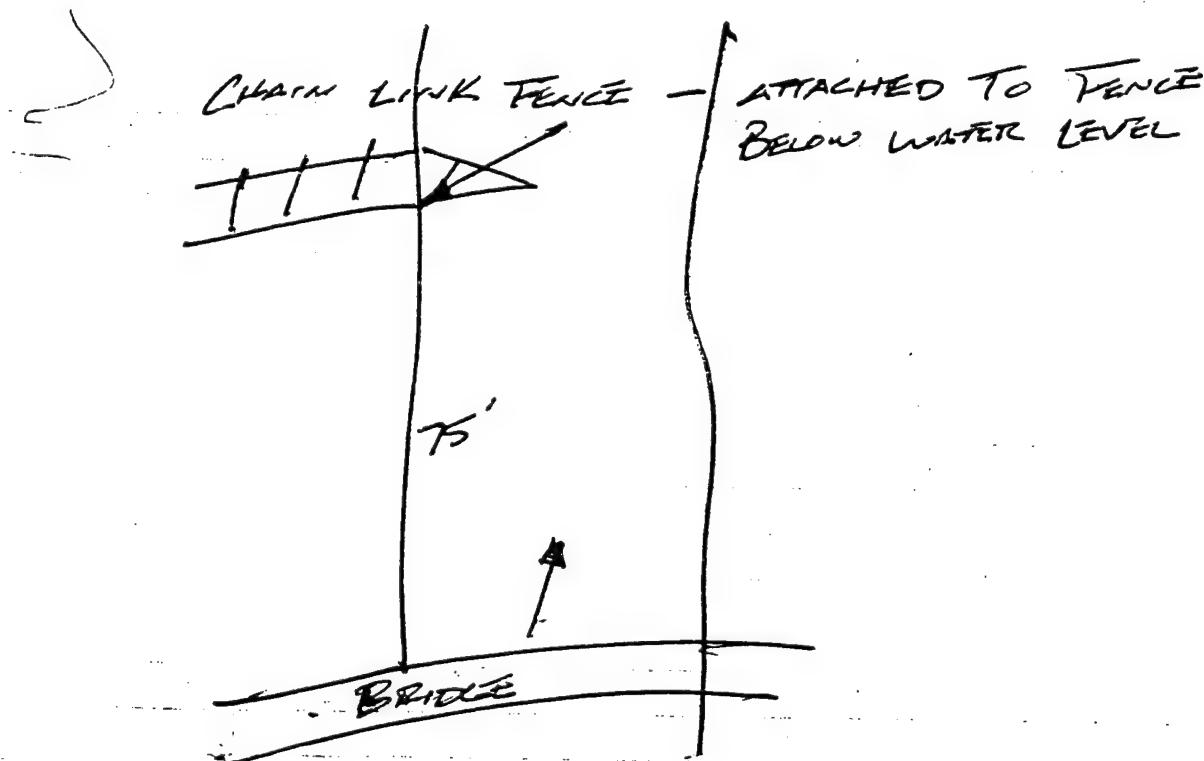
COND : 240

DO : # 336 - 6.4 mg/L

HARDNESS : COLLECTED - MARKED LOC. 1

DESCR: APPROX. 75' DOWNSTREAM OF BRIDGE CROSSING  
ON LEFT BANK - WHERE U.S. ARMY  
PROPERTY FENCE ENTERS (CROSSES) RIVER.

BASKETS ARE ATTACHED TO CHAIN LINK FENCE



WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 1 STA DATE: 10-24-94  
WEATHER CONDITIONS: SUNNY & CLEAR W/ TIDE 20'S F  
SAMPLING EVENT: WEEK 2 TIME: 15 35

WATER QUALITY

TEMP: 16.8 pH: 6.3  
COND: 160 D.O.: 6 4.1 ppm

HARDNESS: \_\_\_\_\_

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 10  
DEAD: 170

*REMOVED*

BASKET B - CLAMS REMOVED

ALIVE: 10  
DEAD: 169

*REMOVED*

COMMENTS: GSK DEAD TISSUE NO. 166 158 A BASKET B BASKET

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: STA 1 DATE: Nov 7, 1994  
WEATHER CONDITIONS: SUNNY & CLEAR IN THE 60'S OF  
SAMPLING EVENT: WEEK 4 TIME: 1430

WATER QUALITY

TEMP: 14.0 pH: 6.0  
COND: 220 D.O.: #15 6.5 ppm  
HARDNESS: TAKEN

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED  
ALIVE: 10  
DEAD: 55

BASKET B - CLAMS REMOVED  
ALIVE: 10  
DEAD: 29

COMMENTS: GOK

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 1 DATE: 11-21-94

WEATHER CONDITIONS: Rain

SAMPLING EVENT: WEEK 6 TIME: 1545

WATER QUALITY

TEMP: 14.0 pH: 6.2

COND: 120 D.O.: #336 6.9 ppm

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 2

DEAD: 9

BASKET B - CLAMS REMOVED

ALIVE: 10

DEAD: 14

COMMENTS: COMBINED ALIVE Clams TO  
CONSTITUTE 1 SAMPLE -  
POLLED BASKETS - Clams WERE  
DEPLETED

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 1 DATE: 12-5-94

WEATHER CONDITIONS: \_\_\_\_\_

SAMPLING EVENT: WEEK 8 TIME: 1615

WATER QUALITY

TEMP: 15.0 pH: 6.0  
COND: 200 D.O.: 7.2 (7.2 ppm)

HARDNESS: Collected

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: \_\_\_\_\_

DEAD: \_\_\_\_\_

BASKET B - CLAMS REMOVED

ALIVE: \_\_\_\_\_

DEAD: \_\_\_\_\_

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

LOCATION Z 10-9-94

TIME : 1320

Temp : 20.7

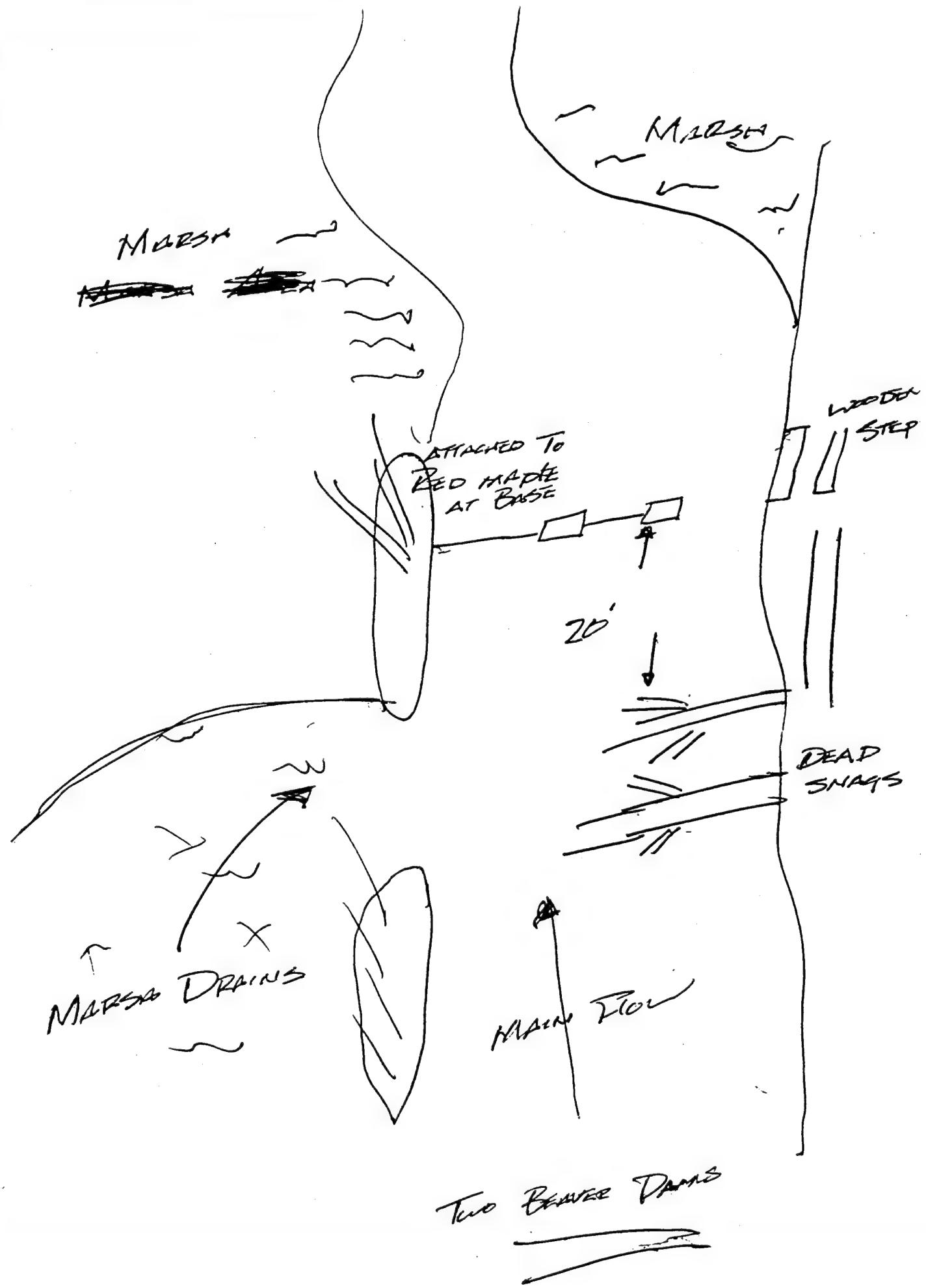
pH : 6.6

Conc : 270

DO : #3 - 9.4 mg/L

HARDNESS : Collected - MARKED Loc Z

DESC. \* Drawing on Following Page



WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: STA 2 DATE: OCT 24, 1994

WEATHER CONDITIONS: SUNNY & CLEAR IN THE 70'S °F

SAMPLING EVENT: 2 WEEK TIME: 14 50

WATER QUALITY

TEMP: 18.5 pH: 6.5

COND: 160 D.O.:  $\frac{73}{7.4}$  ppm

HARDNESS:

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 10

DEAD: 198

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 6

BASKET

COMMENTS: GSC

A

B

DEAD TISSUE NO. 166 5

RETIED BASKETS TO DEAD TREE IN  
MIDDLE OF STREAM.

LINES WERE CROWNED? THROUGH BY  
SOME ANIMAL

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 2 DATE: 11-7-94  
WEATHER CONDITIONS: SUNNY AND CLEAR IN THE 60'S °F  
SAMPLING EVENT: WEEK 4 TIME: 1400

WATER QUALITY

TEMP: 16.0 pH: 6.0  
COND: 240 D.O.: #336 7.1 ppm  
HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 10  
DEAD: 1

BASKET B - CLAMS REMOVED

ALIVE: 20  
DEAD: 4

COMMENTS: GSK

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 2 DATE: 11-21-94

WEATHER CONDITIONS: \_\_\_\_\_

SAMPLING EVENT: WEEK 6 TIME: 1620

WATER QUALITY

TEMP: 14.0 pH: 6.1

COND: 80 D.O.: #3 16.8 ppm

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 10

DEAD: 4

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 20

COMMENTS: \_\_\_\_\_

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WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 2 DATE: 12-5-94

WEATHER CONDITIONS: Partly Cloudy 110 60°

SAMPLING EVENT: WEEK 8 TIME: 1600

WATER QUALITY

TEMP: 14.0 pH: 5.75  
COND: 180 D.O.: # 336 (6.5 ppm)

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 17  
DEAD: 3

BASKET B - CLAMS REMOVED

ALIVE: 20 (151)  
DEAD: 9 TOTAL 290

COMMENTS: Basket removed

Location 3 10-9-94

TIME = 1440

TEMP = 21.5

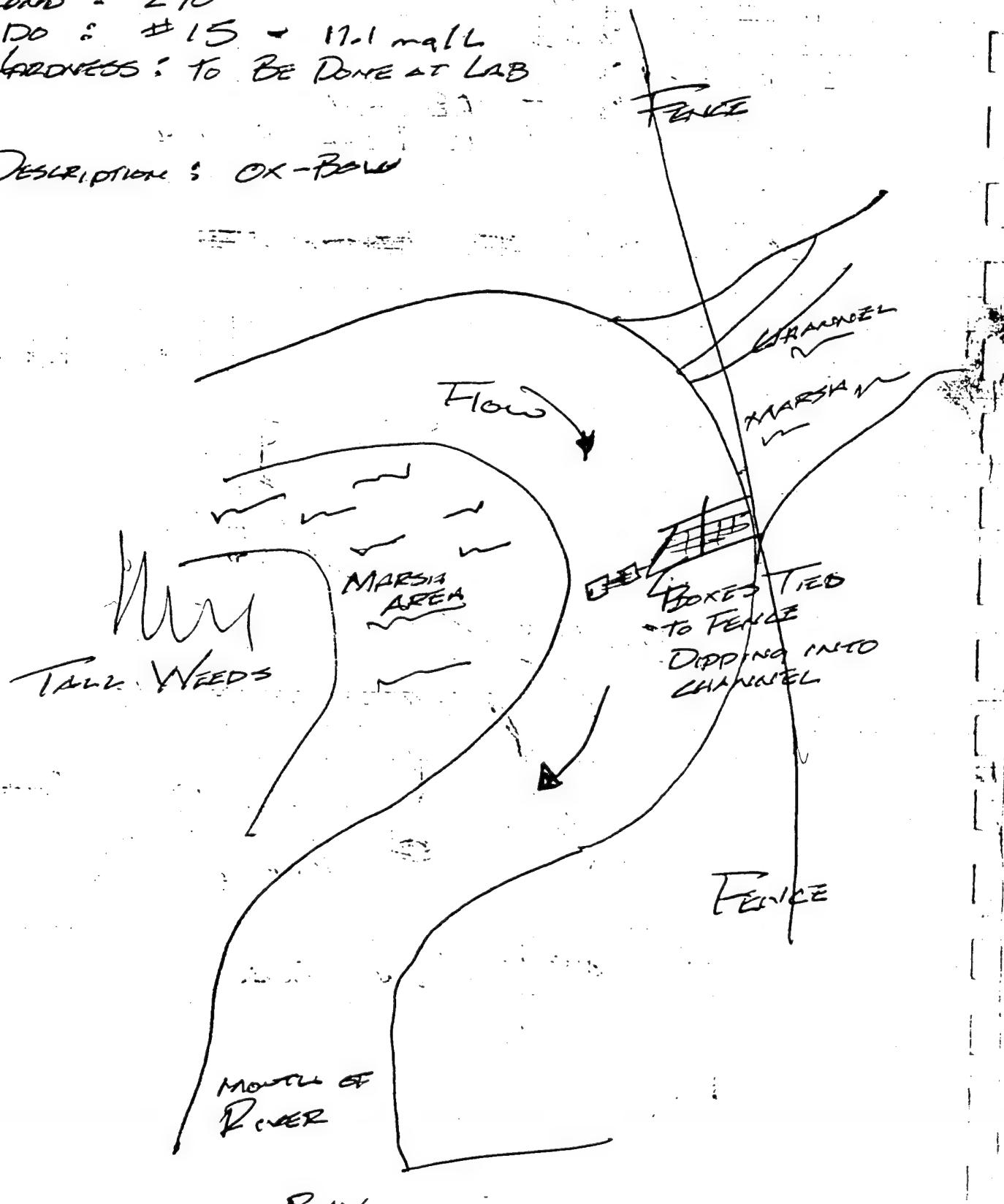
D<sub>16</sub> = 7.8

COND = 270

DO = #15 = 17.1 mg/L

HARDNESS: TO BE DONE AT LAB

Description: OX-BOW



WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: STN 3 DATE: OCT 24, 1994

WEATHER CONDITIONS: SUNNY & CLEAR IN THE 70's °F

SAMPLING EVENT: 2 week TIME: 1420

WATER QUALITY

TEMP: 18.5 pH: 6.9

COND: 210 D.O.: # 15 10.6 ppm

HARDNESS: \_\_\_\_\_

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20

DEAD: 22

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 35

COMMENTS: GJL

BASKET      A      B

DAD TISSUE NO. 13

21

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: STA 3 DATE: NOV 7, 1994

WEATHER CONDITIONS: SUNNY & CLEAR IN THE 60'S F

SAMPLING EVENT: WEEK 4 TIME: 1300

WATER QUALITY

TEMP: 16.0 pH: 6.4

COND: 350 D.O.: #3 9.4 PPM

HARDNESS: TAKEN #3

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20

DEAD: 4

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 2

COMMENTS: GIX

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: Loc. 3 DATE: 11-21-94

WEATHER CONDITIONS: \_\_\_\_\_

SAMPLING EVENT: WEEK 6 TIME: 1500

WATER QUALITY

TEMP: 13.0 pH: 6.1

COND: 140 D.O.: \*6 8.8 ppm

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20

DEAD: 1

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 1

COMMENTS: \_\_\_\_\_

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WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 3 DATE: 12-5-94

WEATHER CONDITIONS: Clear 11<sup>o</sup>in 60<sup>o</sup>s

SAMPLING EVENT: WEEK 8 TIME: 1425

WATER QUALITY

TEMP: 14.0 pH: 5.6

COND: 290 D.O.: #6 (79 ppm)

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20 (173) Total  
DEAD: 0 LIVE

BASKET B - CLAMS REMOVED

ALIVE: 20 (174) Total  
DEAD: 1

+54 REMAINING

COMMENTS:

Location 4

Time 11:15

TEMP : 20.9

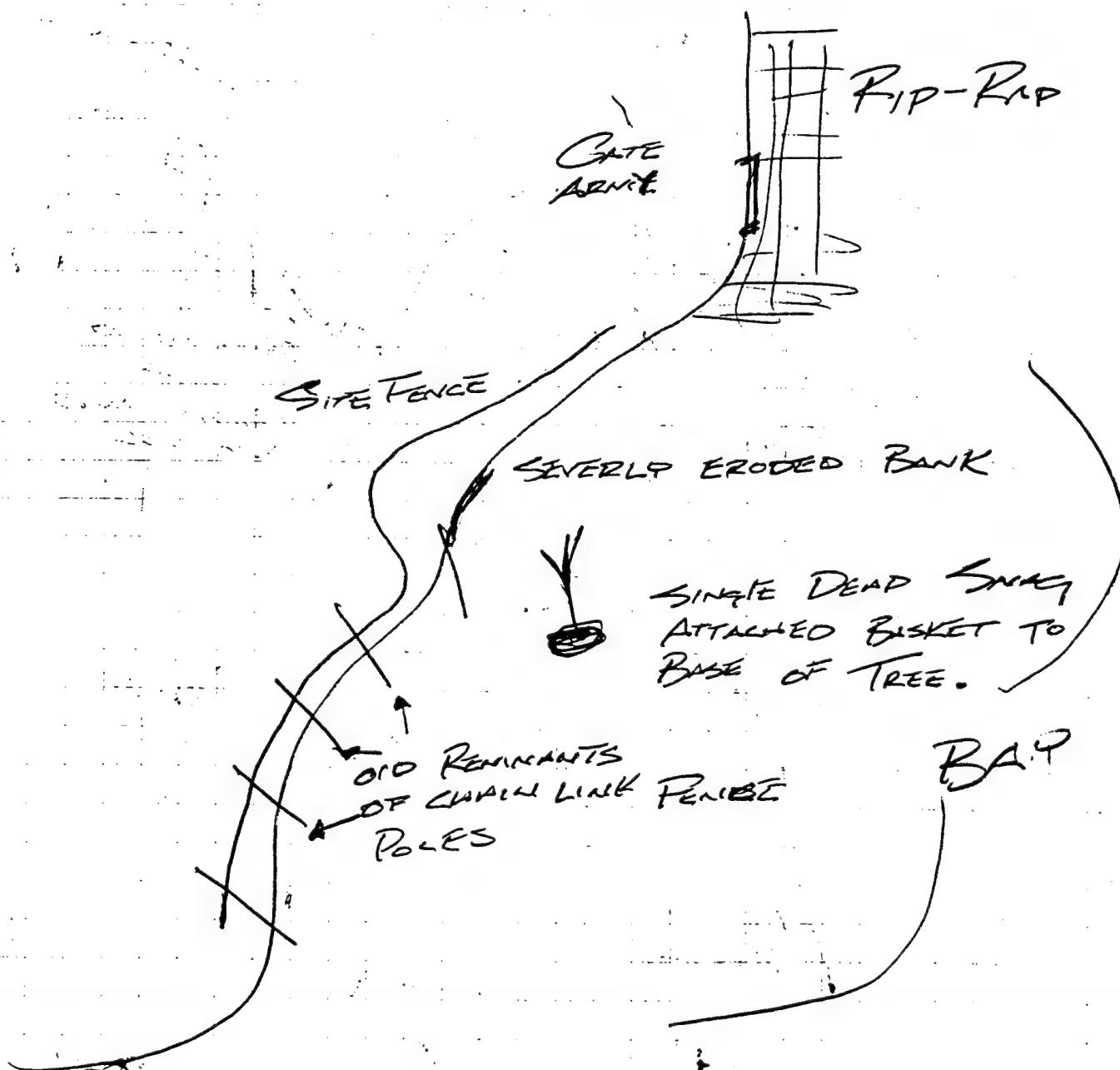
pH : 7.55

COND : 300

DO : #6 - 10.8 mg/l

HARDNESS : To Be Done AT LAB.

Description : ~~Site fence~~



WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: STA 4 DATE: OCT 24, 1994

WEATHER CONDITIONS: SUNNY CLEAR SKYS IN THE 70'S F

SAMPLING EVENT: 2 WEEK TIME: 1400

WATER QUALITY

TEMP: 18.0 pH: 7.6

COND: 220 D.O.: #20 12.2 ppm

HARDNESS: F4 TAKEN

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20

DEAD: 33

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 37

BASKET

COMMENTS: G5k A B

DEAD TISSUE NO. 28 29

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: STA 4 DATE: NOV 7, 1994

WEATHER CONDITIONS: SUNNY & CLEAR IN THE 60'S

SAMPLING EVENT: WEEK 4 TIME: 1225

WATER QUALITY

TEMP: 16.0 pH: 7.5

COND: 430 D.O.: #20 10.5 ppm

HARDNESS: TAKEN #4

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20

DEAD: 1

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 3

COMMENTS: GSh

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 4 DATE: 11-21-94

WEATHER CONDITIONS: Overcast, Rainy 60°

SAMPLING EVENT: WEEK 6 TIME: 1430

WATER QUALITY

TEMP: 13.0 pH: 6.6

COND: 200 D.O.: #15 10.6 ppm

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20

DEAD: 1

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 1

COMMENTS:

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 4 DATE: Dec 5, 1974

WEATHER CONDITIONS: SUNNY IN THE 60's F

SAMPLING EVENT: WEEK 8 TIME: 1410

WATER QUALITY

TEMP: 13.0 pH: 5.5

COND: 300 D.O.: #12 (7.8 ppm)

HARDNESS: TAKEN

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 151 (20)

DEAD: 0

BASKET B - CLAMS REMOVED

ALIVE: 146 (20)

DEAD: 1

COMMENTS: 65K

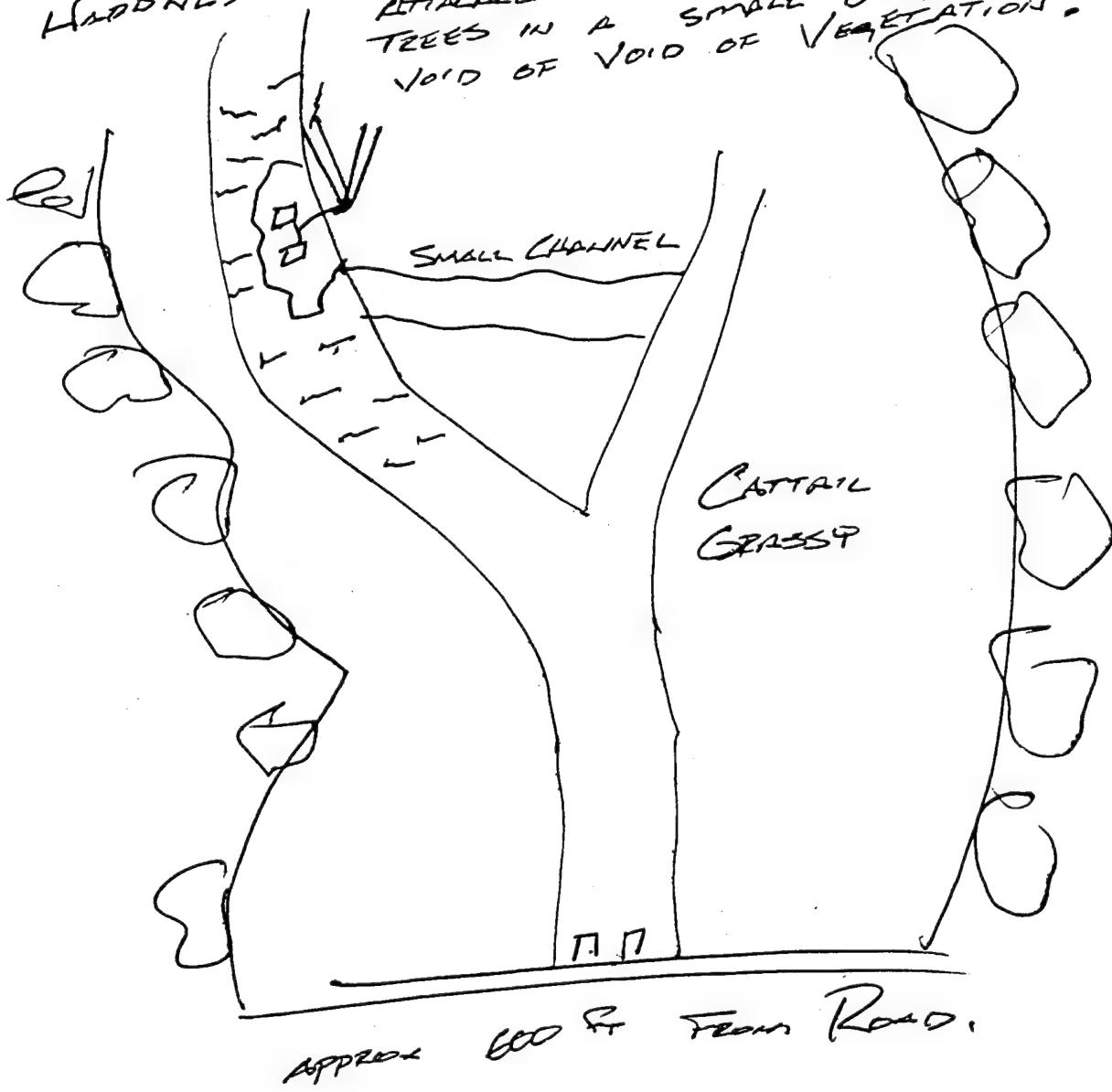
REMOVED BASKETS

Location 5

10-9-94

TIME : 1750  
TEMP : 23.0 °C  
pH : 6.1  
Conc : 260

DO : #3 8.6 mg/L  
HARDNESS : To BE CONDUCTED AT LAB  
ATTACHED BASKETS TO BASE OF 2 SHT  
TREES IN A SMALL DEEPER POOL  
VOID OF VOID OF VEGETATION.



WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 5 DATE: 10-25-94

WEATHER CONDITIONS: Clear low 60's

SAMPLING EVENT: WEEK 2 TIME: 9:00

WATER QUALITY

TEMP: 13°C pH: 5.7  $\text{#20} - 5.6 \text{ m/L}$

COND: 240 D.O.: #20, 6 - #6  $- 5.5 \text{ m/L}$

HARDNESS: Collected

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 10

DEAD: 180

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 62

BASKET

COMMENTS: GSK A B

DEAD TISSUE 143 47

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 5 DATE: NOV7, 1994  
WEATHER CONDITIONS: SUNNY OCEAN DUSK 50's F  
SAMPLING EVENT: WEEK 4 TIME: 1630

WATER QUALITY

TEMP: 17.0 pH: 6.3  
COND: 320 D.O.: F2 11.3 ppm  
HARDNESS: TAKIN

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED  
ALIVE: 10  
DEAD: 3

BASKET B - CLAMS REMOVED  
ALIVE: 20  
DEAD: 4

COMMENTS: GOK

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 5 DATE: 11-22-94

WEATHER CONDITIONS: Clear Low 80's

SAMPLING EVENT: WEEK 6 TIME: 0910

WATER QUALITY

TEMP: 16 C pH: 6.3

COND: 520 D.O.: #3 8.3 ppm

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20

DEAD: 1

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 2

COMMENTS:

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WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 5 DATE: 12-6-84  
WEATHER CONDITIONS: Partly Cloudy 50°s  
SAMPLING EVENT: WEEK 8 TIME: 0905

WATER QUALITY

TEMP: 10.5 C pH: 6.5  
COND: 440 D.O.: #20 8.5 ppm  
HARDNESS: Collected

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED  
ALIVE: 21  
DEAD: 2

BASKET B - CLAMS REMOVED  
ALIVE: 20 (113) TOTAL ALIVE  
DEAD: 6

COMMENTS: Baskets Removed

Location 6

10-9-74

TIME : 1650  
TEMP : 19.9°C

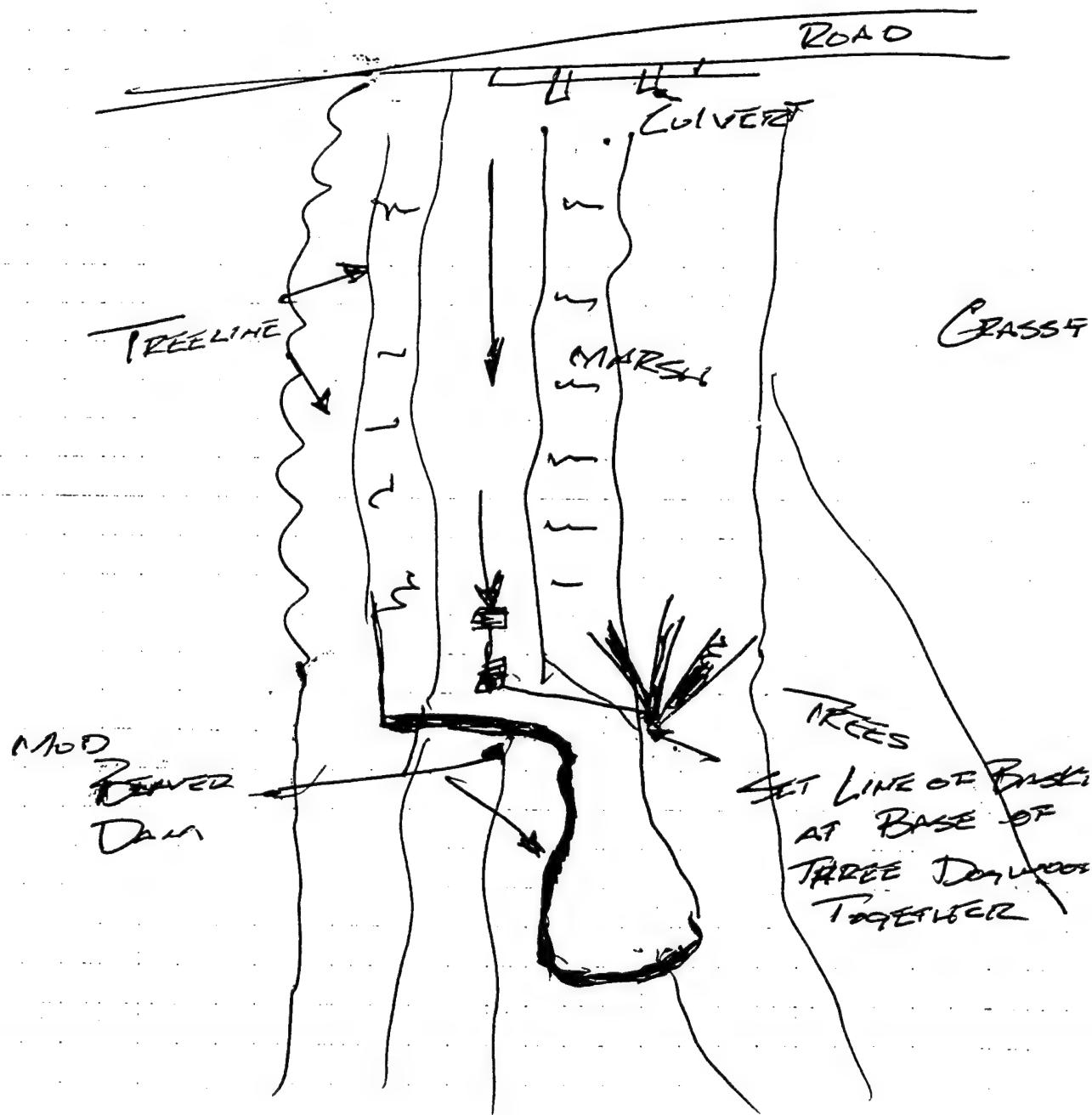
pH : 5.7

COND : 130

DO : #20 8.1 mg/L

Hardness : TO BE CONDUCTED AT LAB

Description : BASKETS PLACED



WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 6 DATE: OCT 25, 1994

WEATHER CONDITIONS: \_\_\_\_\_

SAMPLING EVENT: WEEK 2 TIME: 1035

WATER QUALITY

TEMP: 14.5 pH: 6.0

COND: 130 D.O.: 336 → 6.7 mg/l

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 10

DEAD: 226

BASKET B - CLAMS REMOVED

ALIVE: 10

DEAD: 191

BASKET

COMMENTS: 65K A B

DEAD TISSUE 222 179

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 6 DATE: NOV 9, 1994  
WEATHER CONDITIONS: SUNNY CLEAR IN 60'S  
SAMPLING EVENT: WEEK 4 TIME: 1535

WATER QUALITY

TEMP: 17.0 pH: 6.1  
COND: 180 D.O.: #6 9.1 ppm  
HARDNESS: TAKEN

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: (2) MOVED TO CAGE B -  
DEAD: 12 ~~NOT REMOVED~~

BASKET B - CLAMS REMOVED

ALIVE: 10  
DEAD: 24

COMMENTS: 65%

No LIVE Clams REMOVED FROM  
CAGE A - 2 Remaining WERE  
MOVED TO CAGE B -  
Cage is Removed

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 6 DATE: 4-22-94

WEATHER CONDITIONS: Clear low 60°s

SAMPLING EVENT: WEEK 6 TIME: 0930

WATER QUALITY

TEMP: 11.0 °C pH: 6.1

COND: 380 D.O.: 2.0 8.4 ppm

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: ✓

DEAD: REMOVED

BASKET B - CLAMS REMOVED

ALIVE: 3

DEAD: 15

COMMENTS: Reused Basket B - ALSO -  
DEPLETED NO OF CLAMS

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 6 DATE: 12-5-94

WEATHER CONDITIONS: \_\_\_\_\_

SAMPLING EVENT: WEEK 8 TIME: 1520

WATER QUALITY

TEMP: 10.5 °C pH: 5.9

COND: 230 D.O.: #15 (11.3 ppm)

HARDNESS: COLLECTED

~~WEDGE CLAM SAMPLING~~

~~BASKET A - CLAMS REMOVED~~

~~ALIVE:~~

~~DEAD:~~

~~BASKET B - CLAMS REMOVED~~

~~ALIVE:~~

~~DEAD:~~

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Location: (7)

10-9-94

TIME: 1625

Temp: 19.9 °C

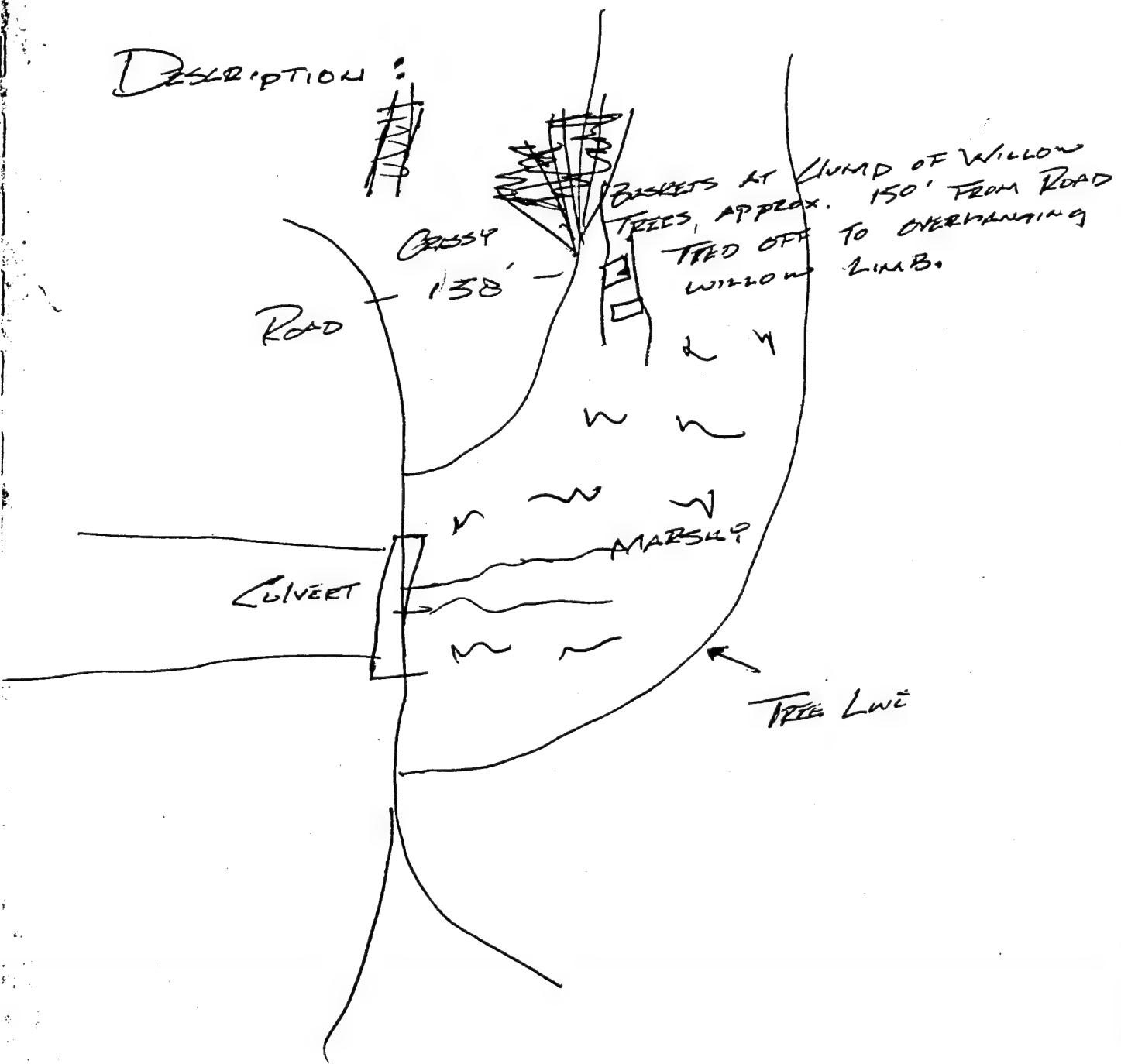
PLL: 5.55 m/s

Conc: 130

DO: #15 5.2 mg/l

Hazards: To Be Conducted AT LAB

Description:



WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 7 DATE: 10-25-94

WEATHER CONDITIONS:

SAMPLING EVENT: WEEK 2 TIME: 0940

WATER QUALITY

TEMP: 16.5°C pH: 5.3

COND: 120 D.O.: #3 → 1.0 mg/L

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: \_\_\_\_\_

DEAD: 250

BASKET B - CLAMS REMOVED

ALIVE: \_\_\_\_\_

DEAD: 250

COMMENTS: 100% MORTALITY IN BOTH BASKETS  
(A,B) BASKETS WERE REMOVED

BASKET

A

B

DSAD TISSUE

246

250

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 7 DATE: NOV 8, 1994

WEATHER CONDITIONS: clear cool in the 50's F

SAMPLING EVENT: Week 4 TIME: 0830

WATER QUALITY

TEMP: 8.0 pH: 5.1

COND: 140 D.O.: 2.8 ppm

HARDNESS: TAKEN

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

BASKET B - CLAMS REMOVED

ALIVE: \_\_\_\_\_

ALIVE: \_\_\_\_\_

DEAD: \_\_\_\_\_

DEAD: \_\_\_\_\_

COMMENTS: GFR

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 7 DATE: 11-22-94

WEATHER CONDITIONS: Clear low 60's

SAMPLING EVENT: WEEK 6 TIME: 0920

WATER QUALITY

TEMP: 9.5°C pH: 5.3

COND: 180 D.O.: #6 3.1 ppm

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE:

DEAD:

BASKET B - CLAMS REMOVED

ALIVE:

DEAD:

COMMENTS:

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 7 DATE: 12-5-94

WEATHER CONDITIONS:

SAMPLING EVENT: WEEK 8 TIME: 1530

WATER QUALITY

TEMP: 14.0 pH: 5.1

COND: 140 D.O.: #3 (7.5 ppm)

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

~~BASKET A - CLAMS REMOVED~~

~~ALIVE:~~

~~DEAD:~~

~~BASKET B - CLAMS REMOVED~~

~~ALIVE:~~

~~DEAD:~~

COMMENTS:

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WOODBRIDGE Research Facility  
WEEK 6 - Clam Removal  
WATER Quality Data

11-21, 22-94

	<u>TEMP °C</u>	<u>pH</u>	<u>COND.</u>	<u>D.O.</u>	<u>HARDNESS</u>	<u>TIME</u>
STA 1	14.0	6.2	120	6.9	80	1545
STA 2	14.0	6.1	80	6.8	60	1620
STA 3	13.0	6.1	140	8.8	100	1500
STA 4	13.0	6.6	200	10.6	140	1430
STA 5	10.0	6.3	520	8.3	120	0910
STA 6	11.0	6.1	380	8.4	100	0930
STA 7	9.5	5.3	180	3.1	60	0920
STA 8	12.0	6.8	500	10.3	120	0830

WEDDING COVE RESEARCH FACILITY  
WEEK 8 - FINAL CLAM REMOVAL  
WATER QUALITY DATA

12-56-44

	<u>TEMP °C</u>	<u>pH</u>	<u>COND</u>	<u>D.O.</u>	<u>HARDNESS</u>	<u>TURB</u>
STA 1	15.0	6.0	200	7.2	100	1615
STA 2	14.0	5.75	180	6.5	60	1600
STA 3	14.0	5.6	290	7.9	80	1425
STA 4	13.0	5.5	300	7.8	100	1410
STA 5	10.5	6.5	940	8.5	240	0905
STA 6	10.5	5.9	230	5.4	-	1520
STA 7	14.0	5.1	140	7.5	-	1530
STA 8	10.0	6.7	900	10.6	240	0830

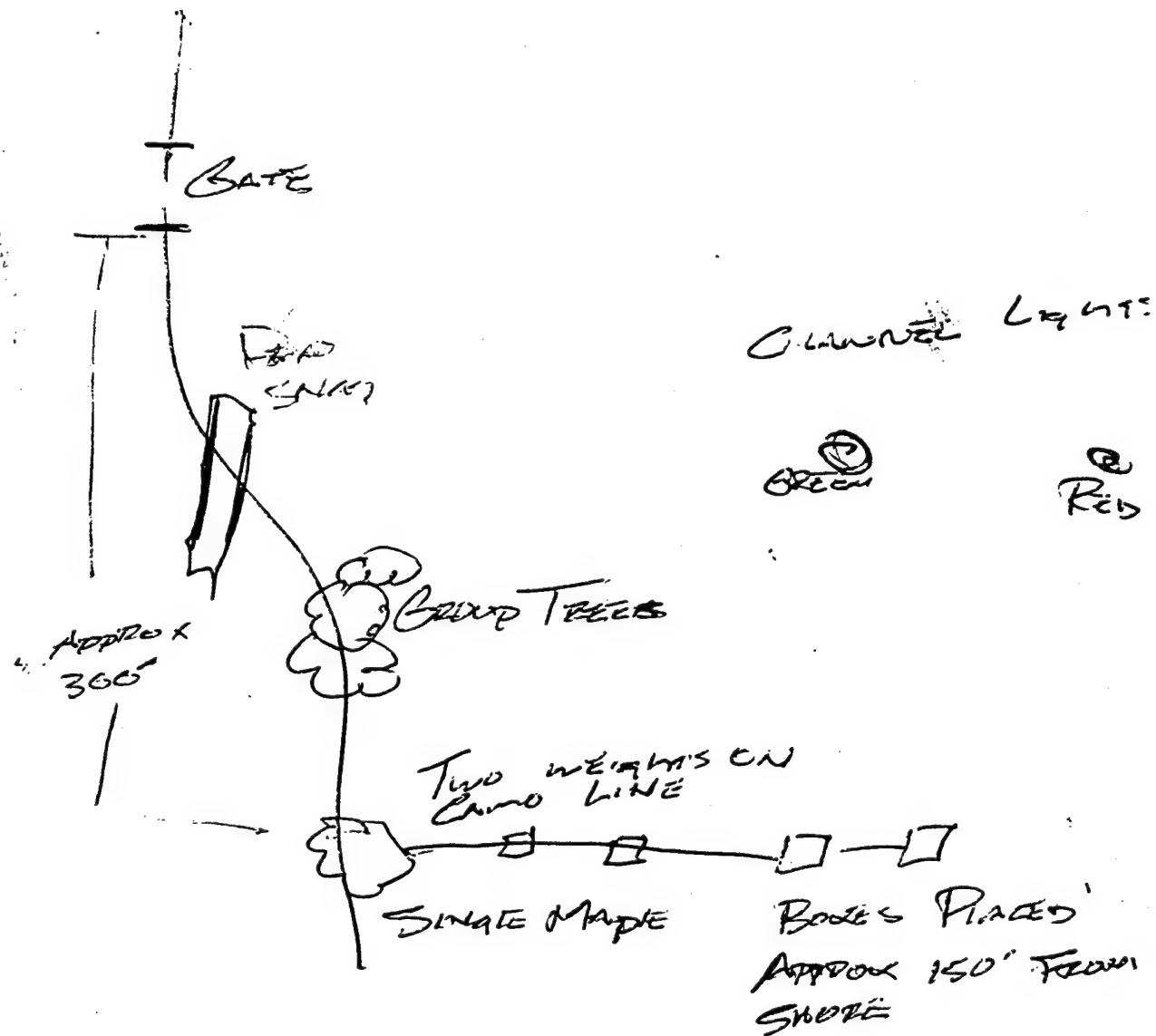
LOCATION 8

10-9-94

Time : 1840  
Temp : 20.6  
pH : 7.7  
Conc : 250  
DO : 336 mg/l

Hardness: TO BE CONDUCTED AT LAB

Description:



WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 8 DATE: 10-24-94

WEATHER CONDITIONS: Clear Sunny Low 70's

SAMPLING EVENT: WEEK 2 (Removal) TIME: 1249

WATER QUALITY

TEMP: 18°C pH: 7.5

COND: 240 D.O.: #336/#2

HARDNESS: Collected 12.6 ppm/12.6 ppm

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20

DEAD: 85

17  
33  
04

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 119

COMMENTS: A-BASKET - B

DEAD TISSUE NO. 69 106

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 8 DATE: 11-22-94

WEATHER CONDITIONS: CLEAR Light 50's

SAMPLING EVENT: WEEK E. TIME: 0630

WATER QUALITY

TEMP: 12.0 °C pH: 6.8

COND: 500 D.O.: #12 10.3 ppm

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20

DEAD: 0

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 1

COMMENTS:

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WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: STA 8 DATE: NOV 7, 1994

WEATHER CONDITIONS: SUNNY & CLEAR IN THE 60'S °C

SAMPLING EVENT: WEEK 4 TIME: 1130

WATER QUALITY

TEMP: 15.0 pH: 6.8

COND: 340 D.O.: # 12 11.7 PPMA  
46

HARDNESS:

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20 REMOVED

DEAD: 12 "

BASKET B - CLAMS REMOVED

ALIVE: 20 REMOVED

DEAD: 11 "

COMMENTS: G51

WOODBRIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 8 DATE: 12-6-0721

WEATHER CONDITIONS: Partly Cloudy

SAMPLING EVENT: WEEK 8 TIME: 0830

WATER QUALITY

TEMP: 10.0 °C pH: 6.7

COND: 400 D.O.: #6 10.6 ppm

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20 (90 TOTAL LNE)

DEAD: 0

BASKET B - CLAMS REMOVED

ALIVE: 20 (56 TOTAL LNE)

DEAD: 1

COMMENTS: REMOVED BASKETS

Woodbridge Treatment Facility - Water Quality Data  
Clam Placement

10-9-94

	<u>Temp°c</u>	<u>pH</u>	<u>Conc</u>	<u>D.O.</u>	<u>Hazeiness</u>	<u>Time</u>
STA 1	17.8	5.5	240	6.4	60	1230
STA 2	20.7	6.6	270	9.4	100	1320
STA 3	21.5	7.8	270	11.1	80	1440
STA 4	20.9	7.5	300	10.8	100	1415
STA 5	23.0	6.1	260	8.6	100	1750
STA 6	19.9	5.7	130	8.1	40	1650
STA 7	19.4	5.5	130	5.2	20	1625
STA 8	20.6	7.7	250	9.6	80	1840
Open Holding Area	19.7	7.5	260	10.5	100	1100

WATER QUALITY  
- pH

10-24-25-04

TEMP°C

	temp°c	pH	cond.	o.o.	brightness	time
sta 1	16.8	6.3	160	4.1	80	1535
sta 2	18.5	6.5	160	7.4	60	1450
sta 3	18.5	6.9	210	10.4	100	1420
sta 4	19.0	7.0	220	12.2	100	1400
sta 5	13.0	5.7	240	5.6	100	0900
sta 6	14.5	6.0	130	6.7	60	1035
sta 7	16.5	5.3	120	1.0	40	0940
sta 8		18.0	240	12.6	120	1240

Woods Hole Research Station  
Regional Climate Survey  
July 14 - July 20  
Oceans Data

	<u>Temp.</u>	<u>DH</u>	<u>Conc.</u>	<u>D.O.</u>	<u>Hardness</u>	<u>Turb.</u>
Sta 1	14.0	6.0	220	6.5	80.	1430
Sta 2	16.0	6.0	240	7.1	60	1400
Sta 3	16.0	6.4	380	9.4	120	1300
Sta 4	16.0	7.5	430	10.5	120	1225
Sta 5	17.0	6.3	320	11.3	100	1630
Sta 6	17.0	6.1	180	9.1	60	1530
Sta 7	8.0	5.1	140	2.8	40	0851
Sta 8	15.0	6.8	340	11.7	120	1130
Sta 9	14.0	4.7	50	9.4	20	0851

WOODBROOK RESEARCH FACILITY  
WEEK 2 - Clam Removal

10-24, 25-04

STA	1	Clams REMOVED		Clams Remaining		% Mortality
		ALIVE	DEAD	(71380E)		
STA	2	A	B	170 (168)	70	
	3	A	B	169 (58)	71	
	4	A	B	178 (60)	42	
	5	A	B	6 (5)	224	
	6	A	B	22 (13)	208	
	7	A	B	35 (21)	195	
	8	A	B	33 (21)	197	
	9	A	B	37 (29)	193	
	10	A	B	180 (43)	60	
	11	A	B	62 (47)	168	
	12	A	B	226 (222)	14	
	13	A	B	191 (179)	49	
	14	A	B	250 (246)	0	
	15	A	B	250 (250)	0	
	16	A	B	85 (69)	145	
	17	A	B	19 (16)	11	
	18	A	B	20		
	19	A	B	20		
	20	A	B			
	21	A	B			
	22	A	B			
	23	A	B			
	24	A	B			
	25	A	B			
	26	A	B			
	27	A	B			
	28	A	B			
	29	A	B			
	30	A	B			
	31	A	B			
	32	A	B			
	33	A	B			
	34	A	B			
	35	A	B			
	36	A	B			
	37	A	B			
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	39	A	B			
	40	A	B			
	41	A	B			
	42	A	B			
	43	A	B			
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	46	A	B			
	47	A	B			
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	92	A	B			
	93	A	B			
	94	A	B			
	95	A	B			
	96	A	B			
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	281	A	B			
	282	A	B			
	283	A	B			
	284	A	B			
	285</					

WATER CHEM. - POND - FISH  
11-8-94 WEEK 4

TIME 0845

TEMP 14°C

COND 50

pH 4.7

DO #20 → 9.4 mg/L

HARDNESS TAKEN

16  
+7.0  
7.6  
9.4

6  
7.6  
4.8  
2.8

J

1-800-448-8522 NO page of

FISH LABORATORY WORK SHEET

Client Name and Number WRF - Seining  
Date and Station 11-8-94 LOC 9  
Type of Sample BASS LARGE/BLUEGILL LOG#

Fish No.	Species Name	Length (TL FL, SL, mm)	Weight (grams)	Scales Taken	Stomach Taken	K Factor	VOUCHER NUMBER
7	LARGEMOUTH	410					
8	"	390	-				
9	"	403					
0	"	x <del>356</del> -	356			X	
1	"	x 283 -				X	
2	"	x 295 -				X	
3	"	-x 285 -				X	
4	"	x <del>294</del> 294				X	
5							
6		<del>203</del>					
7	BLUEGILL	203					
8	"	201					
9	"	200					
0	"	200					
1	"	192					
2	"	198					
3	"	191					
4	"	185					
5	"	179					
6	"	175					
7							
8	CHANNEL CATFISH	410		3	TAKEN		
9	"	392		3			
0							
1							
2							
3							
4							
5	WHITE BASS		RELEASED				
6	"						

10 SPECIMENS TAKEN

## FISH LABORATORY WORK SHEET

Page \_\_\_\_ -

Ent Name and Number WRF / Gill NETTING  
 Date and Station 11-9-94 POND  
 Type of Sample FISH LOG# \_\_\_\_\_

sh.	Species Name	Length (TL, FL, SL mm)	Weight (grams)	Scales Taken	Stomach Taken	K Factor	VOUCHER NUMBER
7	WHITE PERCH	241					
8	"	216					
9	"	222					TAKEN FOR
0	"	223					SAMPLE (6)
1	"	212					
2	"	224					
3							
4	CHANNEL CATFISH	432		SAMPLED	11-9	GN	
5	"	375		SAMPLED	11-10	GN	
6							
7							
8							
9	WHITE PERCH	209					
0	"	230					SAMPLED 11-10
1	"	211					GN
2	"	225					
3							
4							
5							
6							
7							
8							
9							
0							
1							
2							
3							
4							
5							
6							

## FISH LABORATORY WORK SHEET

Client Name and Number WRF LOC 10Date and Station 11-9-94 LOC 10Type of Sample FISH ELECTROFISHING BEINING LOG#

Fish No.	Species Name	Length (TL, FL, SL, mm)	Weight (grams)	Scales Taken	Stomach Taken	K Factor	VOUCHER NUMBER
7	WHITE PERCH	181					
8	"	175					
9	"	182					
0	"	166					
1	"	157			SAMPLED		
2	"	155			10		
3	"	149					
4	"	157					
5	"	147					
6	"	147					
7							
8							
9	BLUGILL	157					
0	"	163					
1	"	153					
2	"	146					
3	"	152			SAMPLED		
4	"	155			10		
5	"	164					
6	"	135					
7	"	132					
8	"	124					
9							
0							
1	BLACK FINNIE	196		SAMPLED			
2							
3							
4							
5							
6							

## FISH LABORATORY WORK SHEET

ent Name and Number VRF  
 e and Station 11-10-94 CDC 10  
 e of Sample Gill NET LOG# \_\_\_\_\_

h	Species Name	Length (TL, FL, SL, mm)	Weight (grams)	Scales Taken	Stomach Taken	K Factor	VOUCHER NUMBER
7	Common CARP	520	3	TAKEN FOR SAMPLE			
8	"	435	3	Z - Fish			
9							
0							
1	Yellow Perch	206	3				
2	"	175 *	3				
3	"	230	3	TAKEN FOR			
4	"	210	3	SAMPLE			
5	"	190 *	3	10-10-94			
6	"	260	3	Z - Fish			
7	"	245	3				
8							
9	*	2101 75%					
0							
1							
2							
3							
4							
5							
6							

## FISH LABORATORY WORK SHEET

Client Name and Number VRFDate and Station 16-8-74 Loc 11Type of Sample Fish/Electrofish LOG# \_\_\_\_\_

Fish No.	Species Name	Length (TL, FL, SL, <del>Temp</del> )	Weight (grams)	Scales Taken	Stomach Taken	K Factor	VOUCHER NUMBER
7	BLACK CRAPPIE	170					
8	"	152		TAKEN	FOR	11-8	
9	"	189			SAMPLE		
0	"	182		(5)			
1	"	190					
2	"	175					
3	"	193		SAMPLE	11-9		
4	"	184		(5)			
5	"	162					
6	"	190					
7							
8	AMERICAN EEL						
9	EEL	285					
0	"	286					
1	"	273					
2	"	271		TAKEN	FOR		
3	"	253		SAMPLE	11-8		
4	"	225		(7)			
5	"	210					
6	"	170					
7	"	295		B SANDIED	11-9		
8	"	265		(2)			
9							
0							
1							
2							
3							
4							
5							
6							

## FISH LABORATORY WORK SHEET

nt Name and Number Loc 11 WRF  
 and Station 11-8-94 Loc 11 WETLAND  
 of Sample Fish 1 ELECTROFISHING LOG# \_\_\_\_\_

Species Name	Length (TL, FL, SL, mm)	Weight (grams)	Scales Taken	Stomach Taken	K Factor	VOUCHER NUMBER
Largemouth Bass	229					1
"	242					2
"	266					3
"	253					4
"	239					5
"	223					6
"	165					
"	155					
Bluegill	166					
"	140					
"	145					
"	159					
"	138					
"	129					
"	127					
"	127					
"	125					
"	126					
"	127					
Common Carp	310					
"	363					
"	289					

COLLECTED FOR  
SAMPLE #6

TAKEN FOR  
SAMPLE  
NO FISH

TAKEN FOR  
SAMPLE

# A-2

# EARTH TECH

# FIELD NOTES

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Woodbridge

SI/RI

Continued From Page

TURDAY October 8, 1994

WEATHER: SUNNY, CLOUDY, HIGH OR LOW TIDE'S

05 - CHRIS LONG AND BIOTA SUBCONTRACTORS ONSITE AT MAIN GATE.

00 - KEITH SCHENKEL ONSITE AT MAIN GATE

05 - KATHY JANERA ONSITE AT MAIN GATE

15 - BRENDAN McCREDOR ONSITE AT MAIN GATE

- EVERYONE GOES TO EARTH TECH TRAILER TO DROP OFF CARS. THEN GO TO MAIN COMPOUND TO DROP OFF BIOTA SUBCONTRACTOR'S BOATS

330 - GO TO REVIEW LOCATIONS OF CLAM BOXES AND FISH COLLECTION AREAS WITH BIOTA SUBCONTRACTORS BEGIN AT CLAM BOX SITE IN BELMONT BAY.

- ACCESS TO BELMONT BAY APPEARS TO BE REASONABLE FROM GATE NEAR TOMBSTONES. THIS ACCESS MAY ALSO BE SUFFICIENT FOR ALL SITES OUTSIDE OF THE ~~MAIN~~ <sup>CL 106</sup> PERIMETER FENCE.

145 - MOVING TO CLAM BOX LOCATION AT DOWNSTREAM POINT IN DRAINAGE DITCH (ARGE 22).

- SUGGEST THAT ONE ACCESS POINT FOR THIS LOCATION CAN BE THE PLACE WHERE THE PERIMETER ROAD DIPS INTO THE DRAINAGE CHANNEL. THE SECOND ACCESS POINT CONSIDERED IS WHERE THE DITCH CROSSES THE ROAD FROM THE MAIN COMPOUND. SUBCONTRACTORS FEEL THAT THIS LOCATION SHOULD NOT BE TOO DIFFICULT TO GET TO. ALSO ENDORSE THAT ONE FISH COLLECTION ZONE WILL BE FROM THIS DOWNSTREAM POINT IN THE DRAINAGE DITCH WHERE THE BOX IS BEING PLACED ~~TO~~ UPSTREAM TO THE BEAVER POND.

Continued on Page 44

Read and Understood By

*[Signature]*

Signed

10/8/94

Date

*John Beale*

Signed

10/14/94

Date

1415 - MOVING TO LOCATION IN OCCOONUM BAY, OFF OF  
 - GUARD STOPS BY TO ASK IF WE WANTED THE GATE  
 TOMBSTONES OPENED. WE SAID YES BUT TO MEET THERE  
 1500. HE SAID OKAY.

- INDICATE TO SUBCONTRACTORS THAT THE CLAM BOXES  
 SUGGESTED TO BE PLACED ON THE BAY AND TIED OFF  
 A SNAG JUST OFFSHORE.

1430 - MOVING TO DOWNSTREAM LOCATION IN MARUMSCO CREEK  
 - INDICATE TO SUBCONTRACTORS THAT THE CLAM BOXES  
 SUGGESTED TO BE PLACED AT THE CONFLUENCE OF THE  
 DRAINAGE DITCH WITH MARUMSCO CREEK  
 - ALSO NOTED THAT THIS AREA, JUST UPSTREAM AND J  
 DOWNSTREAM OF THIS BOX IS ANOTHER FISH COLLECTOR.

1445 - MOVING TO SECOND LOCATION IN MARUMSCO CREEK.  
 - INDICATE THAT THIS BOX IS TO BE PLACED AT THE  
 DOWNSTREAM POINT WHERE A MEANDOR CUTS BACK IN  
 THE MAIN CHANNEL. NOTE: CAN NOT REALLY SEE THIS  
 FROM THE PEREGRINE.

1500 - MOVING TO LOCATION IN AREA 22 DRAINAGE DITCH  
 UPSTREAM OF CHARLES ROAD.  
 - INDICATE THAT THESE BOXES ARE TO BE PLACED AS FAR  
 UPSTREAM AS PRACTICAL.

~~1500~~

1505 - BACK AT GATE NEAR TOMBSTONES, GUARD UNLOCKS GATE  
 AND CHARLES LONG AND SUBCONTRACTORS BEGAN CLEARING.  
 - KEVIN MCCREACHER GOES WITH GUARD TO SEE IF GATE  
 NEAR AREA 1 CAN BE OPENED.

1530 - BRUSH IS CLEAR. MOVING TO GATE NEAR AREA 1.  
 - BEGAN TRYING TO CLEAR BRUSH ONCE GATE IS UNLOCKED.

1545 - IT IS DETERMINED THAT THE BRUSH IS TOO THICK AND  
 SLOPE TOO STEEP TO REALLY CONSIDER THIS FOR  
 ACCESS. WE WELL SEE IF ALLEY CAN BE ACCOMPLISHED AT UPST.  
 LOCATION IN MARUMSCO CREEK

Continued on Pg. 1

Read and Understood By

Chet by

Signed

10/8/94

Date

Joan Blales

10/11/94

Signed

550 - MOVING TO LOCATION AT BEAVER POND.

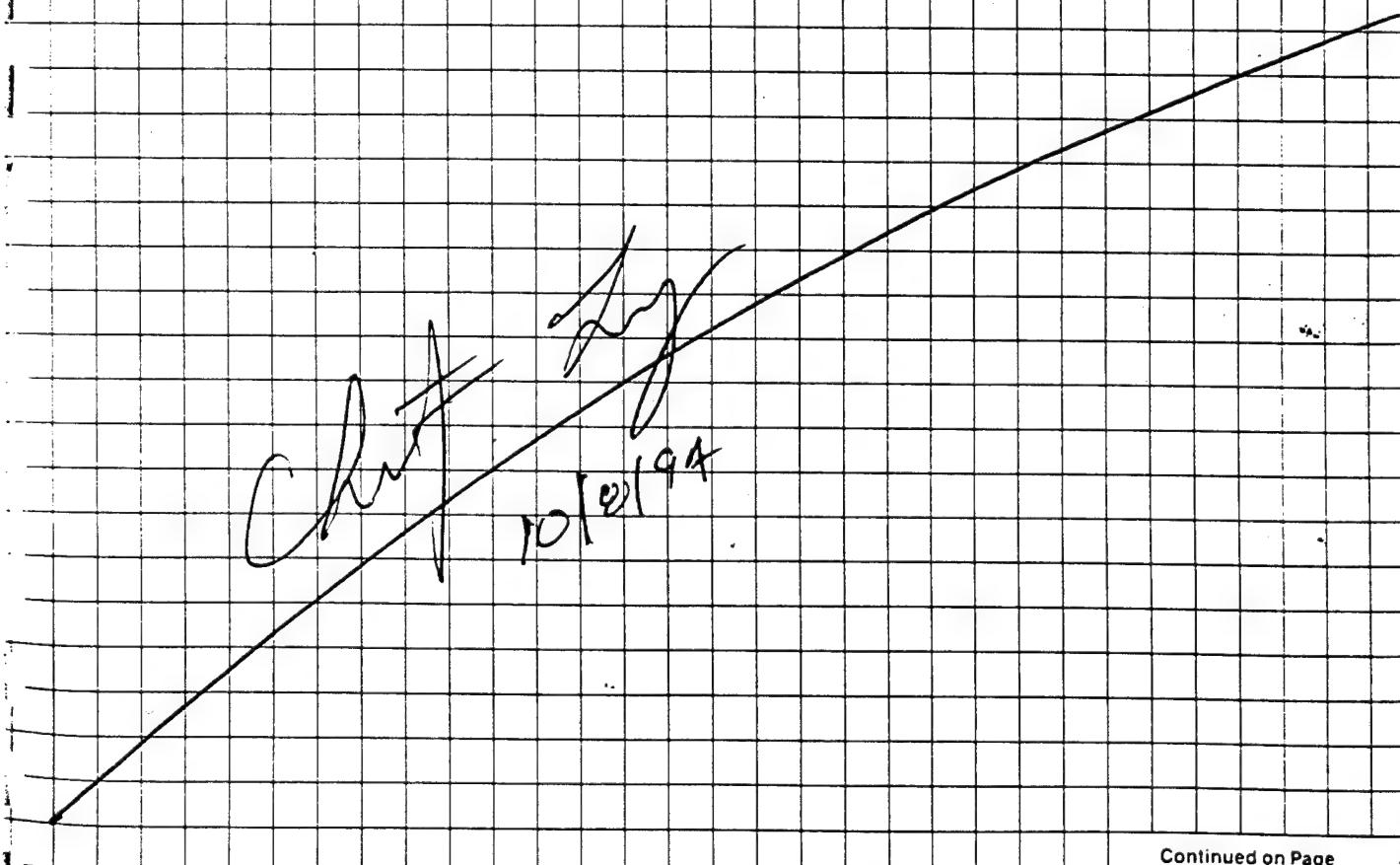
- INDICATE THAT THIS BOX IS TO BE PLACED JUST WEST OF BEAVER DAM IN THE POND.

605 - MOVING TO LOCATION AT UPSTREAMMOST POINT ON MARSH CREEK.

- INDICATE THAT THIS BOX IS TO BE PLACED AT THE POINT WHERE THE FENCE GOES INTO THE CREEK.
- SUBCONTRACTORS SAY THAT THIS WILL BE THE PLACE THEY WILL ACCESS ALL POINTS ON MARSH CREEK PLUS THE LOCATION OFF STREET 1 (TOTAL OF 4 POINTS).
- BEGAN CLEARING BRUSH FOR ACCESS

630 - BRUSH IS CLEAR, DECIDE TO MEET TOMORROW AT 09

- EVERYONE OFF SITE FOR DAY



Continued on Page

Read and Understood By

Chart by  
Signed

10/02/94  
Date

Jean Beales 10/14/1  
Signed Date

Sunday October 9, 1974

Weather: sunny, breezy high in 70's

0930 Greg and Gary of Aquatic Systems onsite.  
Load equipment

Kathy Juniga, Chris Long, Kevin McCrannor and  
Keith Schenkel onsite. All go to tombstone  
location to prepare equipment.

1030 Gene Mavrikis onsite w/ clams. Jeff Bridge  
onsite. Unload clams

1050 Divide clams into ~~18~~<sup>19</sup> 16 baskets.  
250 clams in each. leave baskets in  
edge of bay.

1150 Sample collected for initial conditions.  
40 clams packaged.

1210 Chris, Gary, Greg go to first <sup>7<sup>2</sup></sup> sites w/ 4 ba  
Gene offsite. Keith offsite for lunch.  
Kevin goes to get others gate opened.  
Jeff and Kathy watch clams.

1250 Keith delivers lunch. Kevin back to  
pick up clam baskets for next location.

1310 Kevin and Jeff go to deliver baskets to  
boat for Sites 3 & 4.

Keith and Kathy watch clams.

1330 JEFF BRIGGS OFFSITE FOR DAY

1510 BASKETS AT SITES 1, 2, 3, AND 4 HAVE BEEN DEPL  
EVERYONE BACK AT TOMBSTONE LOCATION TO GET C.  
FOR SITES WITHIN AREA 22 (AT BEAVER POND IS  
UPSTREAM OF CHARLIE ROAD).

1530 CHRIS, GARY, GREG, KATHY, AND KEITH GO TO DEPLOY  
AT SITE UPSTREAM OF CHARLIE ROAD.

Continued on P-8

Read and Understood By

Kathy Juniga

Signed

10-9-94

Date

Joan Beales

Signed

10-9-94

- 1630 - CHRIS, GARY AND GREG GO TO DEPLOY CLAMS AT BAYZER  
- KATHY AND KEITH OFFSHORE FOR DAY.
- 1710 - CHRIS, GARY AND GREG BACK AT TOMBSTONE LOCATION T.  
GET CLAMS FOR 3RD AREA 22 LOCATION.
- 1720 - CHRIS, GARY AND GREG GO TO DOWNSTREAM MOST LOCATE  
FOR AREA 22 TO DEPLOY CLAMS  
- KEVEN McCORMICK WATCHING CLAMS.
- 1815 - CHRIS, GARY AND GREG BACK AT TOMBSTONE LOCATION T.  
PREPARE DEPLOYMENT OF CLAMS IN BAY.
- 1830 - GARY AND GREG TAKE BOAT INTO BAY TO DEPLOY CLAMS  
- CHRIS AND KEVEN STAY ON SHORE.
- 1845 - CLAMS ARE DEPLOYED.  
- GARY AND GREG BACK ON SHORE.  
- EVERYONE PACKING UP EQUIPMENT.
- 1915 - EQUIPMENT PACKED  
- GARY AND GREG GO TO DROP OFF BOAT ON MISH COMP.  
- CHRIS AND KEVEN GO TO MAIN GATE.
- 1930 - CHRIS, KEVEN, GARY AND GREG OFFSHORE FOR DAY.

*Chris*  
10/9/94

Continued on Page

Read and Understood By

*Chris*  
Signed

10/9/94  
Date

*Kathy*  
Signed

11-11  
Da

Monday October 24, 1994

WEATHER: SUNNY, CLEAR, HIGH IN THE 70'S. NOT WINDY.

1200 - CHRIS LONG, GARY AND GREG (AQUATIC SYSTEMS, INC) ON SITE.  
MAIN GATE.

- TAKE CAR UP TO BRIDGE OVER MARUMSKO CREEK.
- MOVE TO GET BOAT.

1220 - CHRIS LONG, GARY AND GREG AT TOMBSTONE LOCATION, 19 METERS, GETTING READY TO SAMPLE.

- GUARD OPENS GATE AT TOMBSTONE LOCATION.

- PLAN IS TO SAMPLE LOCATIONS IN BAYS AND MARUMSKO CREEK BEGINNING AT LOCATION NEAR TOMBSTONES AND END AT UPSTREAMMOST LOCATION IN MARUMSKO CREEK. DRIVE IN CAR TO GET TRUCK TO BRING BOAT BACK INTO THE FACTORY.

1240 - GREG AND GARY GO OUT TO GET BASKETS OFF SHORE -  
TOMBSTONE LOCATION. (LOCATION #8)

- COLLECTING WATER QUALITY DATA.

1250 - GREG AND GARY BRING BASKETS ON SHORE TO PROCESS

1300 - BASKET A - 84 DEAD COLLECTED FOR SAMPLE  
(HAS TIE)

- 20 LIVE COLLECTED FOR SAMPLE

BASKET B - 119 DEAD COLLECTED FOR SAMPLE  
(NO TIE)

- 20 LIVE COLLECTED FOR SAMPLE

1310 - GARY RETIRED BASKETS CLOSED. GREG DOING PAPERWORK

1315 - GARY AND GREG TAKING BASKETS BACK OUT INTO  
BAY

1320 - CHRIS, GARY AND GREG MOVING TO NEXT LOCATION.  
LOCATION IN BAY OFF OF AREA 1. (LOCATION #9)

Continued on Pg

Read and Understood By

*Chf by*

Signed

10/24/94

Date

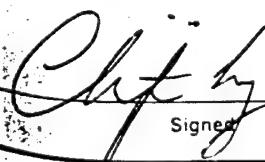
*Kathy Jernigan*

Signed

- 1345 - ARRIVED AT LOCATION ON BAY OFF AREA 1. RETRIEVED AND BROUGHT THEM TO SHORE FOR SAMPLING (LOCATION #1)
- GARY COLLECTING WATER SAMPLES FOR WATER QUALITY DATA
- 1355 - BASKET A - 33 DEAD COLLECTED FOR SAMPLE  
(HAS TIE) - 20 LIVE COLLECTED FOR SAMPLE
- BASKET B - 37 DEAD COLLECTED FOR SAMPLE  
(NO TIE) - 20 LIVE COLLECTED FOR SAMPLE
- 1400 - GARY RETTING BASKETS CLOSED. GREG DOING PAPERWORK
- 1405 - GARY AND GREG TAKING BASKETS BACK OUT INTO THE BM
- 1410 - CHRIS, GARY AND GREG MOVING TO NEXT LOCATION. THE C OF DRAWDOWN DITCH FROM LANDFILLS WITH MARUMSCO CREEK
- 1415 - ARRIVED AT LOCATION AT CONFLUENCE OF DRAWDOWN FROM LANDFILLS WITH MARUMSCO CREEK. (LOCATION #3)
- GARY COLLECTING WATER QUALITY SAMPLES.
  - GREG PULLS BASKETS INTO BOAT.
- 1420 - GREG COLLECTING SAMPLES FROM BASKET A (WITH TIE), CH COLLECTING SAMPLES FROM BASKET B (NO TIE).
- 1425 - BASKET A - 22 DEAD COLLECTED FOR SAMPLE  
(HAS TIE) - 20 LIVE COLLECTED FOR SAMPLE
- BASKET B - 35 DEAD COLLECTED FOR SAMPLE  
(NO TIE) - 20 LIVE COLLECTED FOR SAMPLE
- 1430 - GREG PLACING BASKETS IN WATER AFTER TENDING THEM.  
- MOVING UPSTREAM TO LOCATION #2
- 1445 - ARRIVED AT LOCATION #2
- GARY COLLECTING WATER QUALITY DATA
  - GREG PULLING UP BASKETS INTO BOAT. NOTE: LONE FISH HAS BEEN CUT, MAY HAVE BEEN FROM BEAVER. BASKETS WERE ALSO QUITE DAMAGED, NUMEROUS ROPES WERE CUT OR APPEARED TO BE KNAWED THROUGH BY BEAVER

Continued on Page

Read and Understood By



Signed

10/24/99

Date



Signed

11-11-

1950 - COLLECTING SAMPLES FROM BASKETS. CHRIS COLLECTING  
BASKET A, GREG COLLECTING FROM BASKET B

1455 - BASKET A - ~~10/24/94~~ 193 DEAD COLLECTED FOR SAMPLE  
(HAS TIE) - 10 LIVE COLLECTED FOR SAMPLE  
BASKET B - 6 DEAD COLLECTED FOR SAMPLE  
(NOTE) - 20 LIVE COLLECTED FOR SAMPLE

1510 - GREG PLACED BASKETS BACK INTO WATER AFTER TAKING  
CLOSED AND RETIED LEADERS TO BASKETS  
- MOVING UPSTREAM TO LOCATION #1  
~~10/24/94~~

1530 - ~~ARRIVED~~ ARRIVED AT LOCATION #1  
- GARY COLLECTING WATER QUALITY SAMPLES  
- GREG LOOKING FOR BASKETS WITH HOOK, LEADER TO C  
FROM FENCE IS NO LONGER THERE.

1535 - DECIDE TO DRAG THE AREA FOR THE BASKETS.

1540 - LOCATED THE BASKETS. GREG PULLING THEM ONTO THE

1545 - COLLECTING SAMPLES FROM BASKETS. CHRIS COLLECTING  
BASKET A, GREG COLLECTING FROM BASKET B.

1550 - BASKET A - 70 DEAD COLLECTED FOR SAMPLE

(HAS TIE) - 10 LIVE COLLECTED FOR SAMPLE

BASKET B - 169 DEAD COLLECTED FOR SAMPLE

(NO TIE) - 10 LIVE COLLECTED FOR SAMPLE

1555 - GREG PLACES BASKETS BACK IN WATER AFTER RETIRED. BASKETS OF

1600 - GARY AND CHRIS GO TO PICK UP TRUCK AND TRAILER

- GREG ORGANIZING EQUIPMENT AT BRIDGE

1615 - GARY AND CHRIS BACK AT BRIDGE TO COLLECT EQUIPMENT.

1630 - EQUIPMENT LOADED

- GARY, GREG AND CHRIS GO TO EARTH TECH TRAILER  
SHUCK DEMO CLAIMS AND TITRATE WATER SAMPLES

Continued on Pg

Read and Understood By

*Chris L*  
Signed

10/24/94

Date

*Lithy Janine*  
Signed

1740 - COMPLETED SHUCKING DEAD CLAMS. THE FOLLOWING WERE COUNTED; FOR DEAD TISSUE SAMPLE (OTHERS were empty)

LOCATION BASKET Number 72

1	A	166
1	B	158
2	A	166
2	B	5
3	A	13
3	B	21
4	A	28
4	B	29
8	A	69
8	B	106

1750 - FINISHED CLEANING UP SITE. MOVING BOAT TO BEHIND BUILDING Z01.

1800 - EVERYONE OFFSITE FOR DAY

*John M*  
10/24/94

Continued on Page \_\_\_\_\_

Read and Understood By

*Cliff L*  
Signed

10/24/94  
Date

*Kathy Farren*  
Signed

11/16  
D.

TUESDAY October 25, 1994

WEATHER: CLEAR, COOL, HIGH IN LOW 50'S @ 0730.

FORECAST CLEAR WITH HIGH IN THE LOW 70'S.

0730 - CHARLES LONG ON SITE AT MAIN GATE.

- TRYING TO FIX CAMERAS. DROPPED THE ONE INTO YESTERDAY IN WATER AT LOCATION #2. BOTH CAMERAS FILM FROM YESTERDAY ARE PROBABLY TRASH NOW. CHARLES BROUGHT TODAY DOESN'T APPEAR TO BE WORKING. PUT BATTERIES IN STILL NOT WORKING. BOUGHT A DISPOSABLE CAMERA IN CASE CAN NOT GET THIS CAMERA WORKING.

0810 - GARY AND GREG (AQUATIC SYSTEMS, INC.) ON SITE AT MAIN

- SIGN IN AND MOVE TO PICK UP THE BOAT.

0820 - MOB TO LOCATION #5 (DOWNSTREAM MOST LOCATION IN DRAINAGE DITCH (AREA 22)).

(STAGING AREA)

0825 - ARRIVE AT LOCATION #5 ~~CALIBRATING METERS AND OGRAD EQUIPMENT AT ROAD CROSSING DOWNSTREAM OF LOCATION #5.~~  
TO JUST WALK IN, INSTEAD OF USING THE BOAT DUE TO IT LOW TIDE.

0840 - READY TO WALK IN TO LOCATION #5. DECIDE TO MOVE TO WELL HOUSE AND WALK IN.

0845 - LEAVE VEHICLES AT WELL HOUSE AND WALK IN TO LOCATION #5.

0850 - ARRIVE AT LOCATION #5.

- GARY AND GREG COLLECTING WATER QUALITY DATA.

0855 - FRANCIS COLLECTING WATER QUALITY DATA

- GARY AND GREG RETRIEVING BASKETS

0900 - BASKETS FULLER TO STORE FOR SAMPLING. GARY  
COLLECTED SAMPLES FROM BASKET A, GREG COLLECTED FROM  
BASKET B.

Continued on Page

*Charley*  
Signed

10/25/94  
Date

*Kathy Jarvis*  
Signed

11/1  
Date

Read and Understood By

- 0915 - BASKET A - 180 DEAD COLLECTED FOR SAMPLE  
(HAS TIE) - 10 LIVE COLLECTED FOR SAMPLE  
BASKET B - 62 DEAD COLLECTED FOR SAMPLE  
(NO TIE) - 20 LIVE COLLECTED FOR SAMPLE  
- RETIRING BASKETS CLOSED  
- GREG AND GARY PLACING BASKETS BACK IN WATER  
- PACKING UP EQUIPMENT.
- 0920 - LEAVING LOCATION #5
- 0925 - BACK AT VEHICLES  
- PREPARING TO MOVE TO LOCATION #7. (UPSTREAM MUST LOAD IN BRADDAKE DITCH (ARLEE 22))
- 0930 - CHRIS GOES TO TRAILER TO GET ANOTHER COOLER.  
- GARY AND GREG GO TO LOCATION #7 TO START SAMPLING
- 0935 - GARY AND GREG COLLECTING WATER QUALITY DATA  
- CHRIS AT LOCATION #7.
- 0940 - FINISH COLLECTING WATER QUALITY DATA  
- GARY AND GREG RETIRING BASKETS
- 0945 - BASKETS RETURNED TO SHORE FOR SAMPLING. GARY COLLECTS  
SAMPLES FROM BASKET A, GREG COLLECTING FROM BASKET B
- 0950 - BASKET A - 250 DEAD COLLECTED FOR SAMPLE }  
(HAS TIE) 0 LIVE COLLECTED FOR SAMPLE } 100%  
BASKET B - 250 DEAD COLLECTED FOR SAMPLE }  
(NO TIE) 0 LIVE COLLECTED FOR SAMPLE } 100%  
0955 - PACKING UP EQUIPMENT AND HEADING FOR NEXT LOCATION  
LOCATION #6 IS LAST LOCATION WHICH IS AT THE BEAVER
- 1005 - ARRIVE AT LOCATION #6  
- GARY AND GREG PREPARING EQUIPMENT  
- GARY GOES TO COLLECT WATER QUALITY DATA

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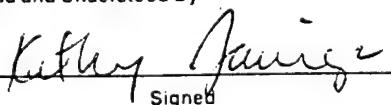
Read and Understood By



Signed

10/25/94

Date



Signed

11/14

Date

10/10 - CHRIS AND GREG PUT BOAT OUT WHERE

10/15 - GARY AND GREG IN BOAT RUNDOWN TO LOCATION OF BASKETS  
- LINE FROM WHICH HAS BEEN CUT. GARY ATTEMPTING TO FIND  
LINE/BASKETS BY DRAGGING WITH A NET

10/20 - LINE HAS BEEN FOUND. DECIDE TO TAKE LINE TO DAM AND  
THE LACES TO SHACK

- BASKETS ARE FULL OF SILT. GARY AND GREG TAKE BASKETS  
DOWNSTREAM OF DAM TO WASH OUT SILT FROM BASKETS.
- WILL PRIORITIZE SAMPLES ON BEAVER DAM. GREG COLLECTING  
SAMPLES FROM BASKET A, GARY COLLECTING SAMPLES FOR  
BASKET S.

10/35 - BASKET A - 226 DEATHS COLLECTED FOR SAMPLE  
(HISTER) - 10 LEVE COLLECTED FOR SAMPLE  
BASKET S - 191 DEATHS COLLECTED FOR SAMPLE  
(HISTER) - 10 LEVE COLLECTED FOR SAMPLE  
- GARY AND GREG RETRIEVE BASKETS.

10/40 - PLACING BASKETS BACK IN WATER. DECIDE NOT TO TRY  
TO SHACK SINCE SOURCE CAN EASILY FIND BASKETS BY DRAGGING FOR  
- MOVING TO TRUCK TO LOAD EQUIPMENT AND BOAT.

10/45 - FINISHED PACKING EQUIPMENT. TAKING BOAT BACK TO  
201, THEN TO TRAILER TO SHACK DEATHS (CLAMS AND)  
WATER SAMPLES.  
- GARY DECIDES TO RETAKE SAMPLES AT BEAVER DAM LOCATE

11/00 - GARY FINISHES THE RETAKES  
- GREG AND GARY GO TO DROP OFF BOAT AT BOARDING 2  
- CHRIS GOES TO TRAILER TO SET UP SHACKLING STATION

11/20 - GREG AND GARY AT TRAILER TO SHACK DEATHS (CLAMS)  
- CHRIS, GREG AND GARY SHACKLING DEATH CLAMS.

Continued on P

Read and Understood By

*Chiffy*

Signed

10/25/91

Date

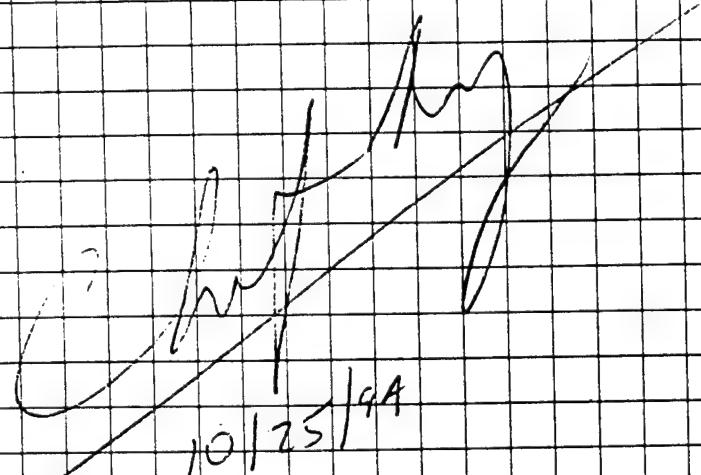
*Keithly Joring*

Signed

1225 - COMPLETED SHUCKING DEAD CLAMS. THE FOLLOWING NUM  
OF TISSUE WERE COUNTED FROM DEAD CLAMS

LOCATION	BASKET	NUMBER
5	A	143
5	B	47
6	A	222
6	B	179
7	A	246
7	B	250

1230 - FINISHED CLEANING UP SITE  
- EVERYONE OFF SITE.



Continued on Page

Read and Understood By

*Clif S*  
Signed

10/25/94  
Date

*Kathy Fairview*  
Signed

11/14  
D

TUESDAY NOVEMBER 1, 1994

WEATHER: RAINY, HIGH IN THE 60'S

- 1000 - CHRIS LONG AND KEITH SCHENKER ON SITE TO MOVE EQUIPMENT FROM TRAILER TO STORAGE ROOM IN BLDG 211.
- 1230 - CHRIS LONG AND KEITH SCHENKER OFF SITE FOR LUNCH AFTER MOVING TWO LOADS INTO STORAGE ROOM.
- 1330 - CHRIS LONG AND KEITH SCHENKER BACK ON SITE. IT IS RAINING VERY HARD WITH LARGE HAIL. WE RODE STORM OUT AT THE MAIN GATE.
- 1345 - CHRIS LONG AND KEITH SCHENKER RESUME MOVING EQUIPMENT.
- 1500 - CHRIS LONG AND KEITH SCHENKER FINISHED MOVING EQUIPMENT AND LEAVE SITE FOR DAY.

Chris  
11/1/94

Continued on Page \_\_\_\_\_

Read and Understood By

Chris

Signed

11/1/94

Date

Kathy Jirip

Signed

11/1

CL 117

TUE MONDAY NOVEMBER 7, 1994

WEATHER: SUNNY, CLEAR, BREEZY, HIGH IN THE 70'S FORECAST.

1000 - CHRIS LONG ONSITE AT MAIN GATE WAITING FOR SUBCONTRACTORS (AQUATIC SYSTEMS, INC)

1030 - GARY AND GREG ONSITE (AQUATIC SYSTEMS, INC)

- MOVING ONE CAR NEAR LOCATION #1 AND GOING TO GET BOAT BY BUILDING 201.

1045 - ARRIVE AT BUILDING 201. GARY AND GREG HOOKING UP BOAT.

1055 - MOVE TO TOMBSTONE AREA TO LAUNCH BOAT NEAR LOCATION.

1100 - GARY, GREG AND CHRIS AT TOMBSTONE AREA ORGANIZING EQUIPMENT AND WAITING FOR GUARD TO OPEN GATE.

1110 - GUARD ARRIVES TO UNLOCK GATE. STILL ORGANIZING EQUIPMENT.

1120 - EQUIPMENT READY. GARY AND GREG LAUNCHING BOAT AT LOCATION NEAR TOMBSTONES.

- WILL FOLLOW SAME SAMPLING ORDER AS LAST TIME.

1130 - ARRIVE AT LOCATION #8. GARY AND GREG RETRIEVE BASKETS. CHRIS WAITING ON SHORE. WILL COLLECT SAMPLES FROM SHORE.

1135 - BASKETS BROUGHT TO SHORE. GARY COLLECTING SAMPLES FROM BASKET A, GREG COLLECTING SAMPLES FROM BASKET B.

1140 - BASKET A - 12 DEAD COLLECTED FOR SAMPLE  
(HAS TIE) - 20 LIVE COLLECTED FOR SAMPLEBASKET B - 11 DEAD COLLECTED FOR SAMPLE  
(WITHOUT TIE) - 20 LIVE COLLECTED FOR SAMPLE

- BASKETS RETIED CLOSED

1145 - GARY AND GREG TAKING BASKETS BACK OUT INTO BAY Continued on Page  
- GARY COLLECTING WATER QUALITY SAMPLES.

Read and Understood By

*Chf by*

Signed

11/7/94

Date

*Kathy Jaquin*

Signed

11/14/

D:

1150 - KATHY JANIBA ONSITE AT LOCATION #8.

1155 - KATHY JANIBA GOES TO MAIN GATE TO PICK UP ALFRED PINCKNEY OF US FISH AND WILDLIFE. CHRIS LONG TELLS KATHY THAT THE NEXT LOCATION TO BE COMPLETED IS LOCATION #4, THE LOCATION IN THE BAY OFF AREA 1.  
- CHRIS LONG, GARY, AND GREG HOP IN BOAT AND START TOWARDS LOCATION #4.

1225 - CHRIS LONG, GARY, AND GREG ARRIVE AT LOCATION #4.

- GARY COLLECTING WATER QUALITY SAMPLES/DATA.

1230 - BASKETS RETRIEVED. THE TIDE IS EXTREMELY LOW SO ARE PROCESSING THE SAMPLES AT THE BASKET LOCATION WILL ADD SOME LATER AND TAKE THEM OUT AND FINISH.  
- GARY COLLECTING SAMPLES FROM BASKET A, GREG COLLECTS SAMPLES FROM BASKET B.

1235 - BASKET A - 1 DEAD COLLECTED FOR SAMPLE.

(HAS TIDE) - 20 LIVE COLLECTED FOR SAMPLE.

BASKET B - 3 DEAD COLLECTED FOR SAMPLE.

(NO TIDE) - 20 LIVE COLLECTED FOR SAMPLE.

- KATHY JANIBA AND DR. PINCKNEY ONSITE AT LOCATION #4 INSIDE FENCE.

1240 - CHRIS LONG GOES TO TALK TO DR. PINCKNEY WHILE GARY AND GREG RETIE BASKETS AND ADD ADDITIONAL TO BASKETS TO TAKE THEM FURTHER OUT TO COMPLETELY SUBMERS BASKETS

1245 - MOVING TO LOCATION #3

1255 - BECAUSE OF LOW TIDE, MANEUVERING UP STREAM THROUGH MARSHES CACKE IS DIFFICULT.

- ARRIVE AT LOCATION #3

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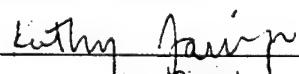


Signed

11/7/99

Date

Read and Understood By



Signed

11/14

D:

300 - GARY COLLECTING WATER QUALITY SAMPLES/DATA.

- GREG WAITS UNTIL SAMPLES ARE COLLECTED THEN RETRIEVED BASKETS AT LOCATION #3
- BASKETS RETRIEVED. GREG COLLECTING SAMPLES FROM BASKET CHRIS COLLECTING SAMPLES FROM BASKET 3,

310 - BASKET A - 4 DEAD COLLECTED FOR SAMPLE  
(HAS TIE) 20 LIVE COLLECTED FOR SAMPLE  
BASKET B - 2 DEAD COLLECTED FOR SAMPLE  
(NO TIE) 20 LIVE COLLECTED FOR SAMPLE

315 - CHRIS AND GREG RETIE BASKETS

- GREG PLACES BASKETS BACK IN WATER
- MOVING TO LOCATION #2

1345 - ARRIVE AT LOCATION #2 AFTER A VERY DIFFICULT JOURNEY DUE TO THE LOW WATER.

- CHRIS, GARY, AND GREG GO TO SHORE TO DISCUSS EVENTS WITH KATHY AND DR. PINCHENAY.
- DECIDE TO RETRIEVE BASKETS AND BRING THEM TO SHORE SO DR. PINCHENAY CAN LOOK AT THE BASKETS/CLAMS.

'355 - GREG AND GARY GO TO COLLECT WATER QUALITY SAMPLES AND RETRIEVE THE BASKETS

1400 - GARY COLLECTING SAMPLES FROM BASKET A AND GREG COLLECTING SAMPLES FROM BASKET B.

1405 - BASKET A - 1 DEAD COLLECTED FOR SAMPLE  
(HAS TIE) - 10 LIVE COLLECTED FOR SAMPLE  
BASKET B - 4 DEAD COLLECTED FOR SAMPLE  
(NO TIE) - 20 LIVE COLLECTED FOR SAMPLE

1410 - GARY AND GREG RETIE BASKETS. AND ALSO RETIEING SOME OF THE ROPES.

1415 - BASKETS PLACED BACK IN WATER AND EVERYONE MOVING TO LOCATION #1.

Continued on Page 6

Read and Understood By

Cliff L  
Signed

11/7/94  
Date

Kathy Janiger  
Signed

11/14/96  
Date

- 1430 - EVERYONE ARRIVES AT LOCATION #1  
 - GREG AND GARY COLLECTING WATER QUALITY DARM/SAMPLES.
- 1435 - GREG RETRIEVING BASKETS. ONCE AGAIN THE ROPES AT LOCATION HAVE BEEN CHEWED THROUGH AND GREG MUST TRY THE BASKETS.
- 1440 - BOTH BASKETS RETRIEVED AND PLACED IN BOAT FOR SAMPLING. GREG SAMPLING BOTH BASKETS.
- 1445 - BASKET A - 55 DEAD COLLECTED FOR SAMPLE (HAS FEE) 10 LIVE COLLECTED FOR SAMPLE (11 REMAINING)  
 BASKET B - 29 DEAD COLLECTED FOR SAMPLE (NO FEE) 10 LIVE COLLECTED FOR SAMPLE
- 1450 - GREG RETIRING BASKETS CLOSER AND PLACING BASKETS BACK INTO WATER.  
 - GREG AND GARY BRING THE BOAT TO SHORE TO REMOVE IT FROM THE WATER.
- 1500 - CHRIS LONG, GARY, KATHY JANIBA AND DR. PENCKNEY TO GET TRUCK AND TRAILER FOR BOAT.
- 1510 - EVERYONE BACK AT LOCATION #1 TO LOAD BOAT AND EQUIPMENT.
- 1520 - MOVING TO LOCATION #6 (BEAVER POND)
- 1530 - EVERYONE AT THE BEAVER POND (LOCATION #6). GREG AND GARY COLLECTING THE WATER QUALITY SAMPLES.
- 1540 - DR. PENCKNEY LEAVES FOR THE DAY.  
 - GREG AND GARY TAKE BOAT TO RETRIEVE CLAMS.  
 - CHRIS AND KATHY ON THE BEAVER DAM.
- 1545 - BASKETS PULLED OUT OF WATER. GARY PROCESSING SAMPLES FOR BASKET A, GREG COLLECTING FROM BASKET B.

Continued on Page 59  
 Read and Understood By

*Chris Long*  
 Signed

11/7/94

Date

*Kathy Janiba*  
 Signed

11/11/94

1550 - BASKET A - 12 DEAD COLLECTED FOR SAMPLE  
(HAS TEE) - 0 LIVE COLLECTED FOR SAMPLE (2 REMAINING ADDED  
BASKET B)  
BASKET B - 23 DEAD COLLECTED FOR SAMPLE  
(NO TEE) - 10 LIVE COLLECTED FOR SAMPLE (18 REMAINING  
- BASKET A REMOVED AND BASKET B 2 FROM BASKET  
PLACED BACK IN WATER.

1555 - GREG AND GARY MOVING BACK TO EDGE OF POND TO LOAD TR

1600 - EVERYONE MOVING TO LOCATION #5.

1605 - AT THE PUMPHOUSE #1, GUARD STOPS BY AND ASKS IF WE  
CAN HELP A BIRD THAT IS INJURED. WE ALL GO TO HELP.

1615 - BIRD HAS A LURE CAUGHT IN ITS WING. GREG AND GARY  
CATCH BIRD, REMOVE LURE THEN RELEASE BIRD.  
- MOVING BACK TO PUMPHOUSE #1

1620 - AT PUMPHOUSE #1, GREG AND GARY GETTING EQUIPMENT  
TOGETHER.

1625 - MOVING TO LOCATION #5.

1630 - EVERYONE AT LOCATION #5. GARY COLLECTING WATER QUALITY SAMPLES.  
GREG RETRIEVING BASKETS. GREG COLLECTING SAMPLES FROM BASKET A.  
GARY COLLECTING SAMPLES FROM BASKET B.

-  
1635 - BASKET A - 3 DEAD COLLECTED FOR SAMPLE  
(HAS TEE) - 10 LIVE COLLECTED FOR SAMPLE  
BASKET B - 4 DEAD COLLECTED FOR SAMPLE  
(NO TEE) - 20 LIVE COLLECTED FOR SAMPLE

1640 - GREG PLACES BASKETS BACK IN WATER AFTER TIDING THEM UP  
- MOVING BACK TO VEHICLES.

1645 - EVERYONE BACK AT THE VEHICLES. GARY FINISHING THE  
WATER QUALITY SAMPLING

Continued on Page

Read and Understood By

*Chet*  
Signed

11/7/94  
Date

*Kathy Janine*  
Signed

11/14  
D.

1650 - MOVED TO BUILDING Z11 TO SHUCK DEAD CLAMS  
TITRATED WATER SAMPLES

1655 - AT BUILDING Z11. KATHY JANIVA, CHRIS LONG, AND  
GREG SHUCKING. GARY TITRATING.

1715 - COMPLETED SHUCKING DEAD CLAMS, THE FOLLOWING  
NUMBERS WERE COUNTED (TISSUE COLLECTED - OTHERS EL)

LOCATION	BASKET	NUMBER
1	A	42
1	B	9
2	A	1
2	B	3
3	A	1
3	B	0
4	A	0
4	B	0
5	A	0
5	B	0
6	A	12
6	B	23
8	A	1
8	B	6

- GARY STILL TITRATING WATER SAMPLES. KATHY, CHRIS,  
GREG CLEANING UP AND PUTTING EQUIPMENT AWAY.

1745 - FINISHED CLEANING UP AND PUTTING EQUIPMENT AWAY AND  
MOVING TO PUT THE BOAT AWAY.

1800 - FINISHED STORING EQUIPMENT/BOAT. EVERYONE OFFSITE FOR A

Chris L

11/7/94

Continued on Page

Read and Understood By

Chris L

Signed

11/7/94

Date

Kathy Janiva

Signed

11

TUESDAY NOVEMBER 8, 1994

WEATHER: SUNNY, CLEAR, COOL, HIGH OF 50°. FORECAST OF SUN AND CLEAR WITH HIGHS IN THE UPPER 60'S.

0745 - KATHY JARRELL ON SITE AT MAIN GATE

0750 - GREG AND GARY ON SITE AT MAIN GATE

0755 - CHRIS LONG ON SITE AT MAIN GATE

0800 - GO TO PICK UP EQUIPMENT / BOAT

0815 - FINISHED GETTING EQUIPMENT / BOAT. GARY AND GREG WERE  
TAKE WATER QUALITY SAMPLES / DATA FROM LOCATION #7  
EVEN THOUGH THERE WEREN'T ANY CLAMS LEFT TO SAMPLE  
THERE. THIS IS FOR CONSISTENCY. MOVING TO LOCATION #

0830 - GARY AND GREG FINISH COLLECTING WATER QUALITY SAMPLES / DATA  
FROM LOCATION #7. MOVING TO POND TO CATCH SOME FISH

0835 - EVERYONE AT THE POND. SETTING UP EQUIPMENT.

0905 - EVERYTHING IS READY. THE PLAN IS TO DEPLOY A SEINE  
ACROSS THE POND AND DRAG 1/2 OF THE POND THEN DRAG  
THE OTHER HALF. GARY AND GREG IN THE BOAT DEPLOYED  
SEINE, CHRIS AND KATHY ON SHORE HOLDING THE ENDS OF THE

1030 - AFTER SWIMMING THE POND 5 TIMES, WE DECIDE TO TAKE A  
BREAK AND SEE WHAT WE HAVE AND WHAT WE STILL NEEDS  
FROM THE POND.

- ONE OF THE LARGEMOUTH BASS CAUGHT HAD A U.S. FISH  
WILDLIFE TAG WITH A TELEPHONE #. CHRIS LONG CALLED THAT  
NUMBER AND GIVES THEM THE INFO. ON THE FISH AND TELLS  
THEM THAT WE ARE RELEASING IT. SHE SAID SOMEONE MAY  
TO GET MORE INFO. ON THE FISH.

Continued on Page

Read and Understood By

*Chet L*  
Signed

11/8/94

Date

*Kathy Jarre*  
Signed

11/14

1100 - THE FOLLOWING WAS RECORDED FOR THE FISH:

LARGEMOUTH BASS (8 CAUGHT, 5 KEPT, SEE BELOW)

- ① LENGTH = 410 mm
  - ② LENGTH = 390 mm
  - ③ LENGTH = 403 mm
  - ④ LENGTH = 356 mm
  - ⑤ LENGTH = 283 mm
  - ⑥ LENGTH = 295 mm
  - ⑦ LENGTH = 285 mm
  - ⑧ LENGTH = 294 mm
- } THESE WERE KEPT

BLUEGILL (15 CAUGHT, 10 LARGEST KEPT, SEE BELOW)\*

- ① LENGTH = 203 mm
- ② LENGTH = 201 mm
- ③ LENGTH = 200 mm
- ④ LENGTH = 200 mm
- ⑤ LENGTH = 192 mm
- ⑥ LENGTH = 198 mm
- ⑦ LENGTH = 191 mm
- ⑧ LENGTH = 185 mm
- ⑨ LENGTH = 179 mm
- ⑩ LENGTH = 175 mm

\* 10 WERE KEPT DUE TO THE 5 LARGEST POSSIBLY NOT  
THE AMOUNT OF TISSUE PER FISH REQUIRED (50 g.), AND 10  
THE MAXIMUM NUMBER ALLOWED TO COLLECT PER OUR

CATFISH (2 CAUGHT, 2 KEPT, SEE BELOW)

- ① LENGTH = 410 mm
- ② LENGTH = 392 mm

WHITE BASS (2 caught, 2 released due to not needing them)

1125 - DECIDE TO TRY SIZING THE REMAINING SHALLOW PORTION  
POND TO TRY TO GET 3 MORE CATFISH FOR SAMPLES. IF  
DOESN'T WORK, WE WILL DEPLOY A NET AND LET IT SET  
NIGHT AND CHECK TOMORROW MORNING

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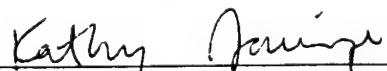
Read and Understood By



Signed

11/8/94

Date



Signed

1155 - MORE SETTING DID NOT CATCH ANY MORE CATFISH. GARY AND GREG DECIDE TO DEPLOY GILL NETS THEN RETRIEVE THEM FOR MORNING.

1200 - GARY AND GREG OUT ON BOAT SETTING 3 GILL NETS

1215 - GARY AND GREG COMPLETE DEPLOYING ALL 3 GILL NETS.  
- DECIDE TO TAKE LUNCH THEN MOVE ON TO AREA 22 DR DITCH FISHING LOCATION

1220 - KATHY JANIGA AND CHRIS LONG OFFSITE TO GET CAMERAS.  
- GARY AND GREG STAY AT POND TO EAT LUNCH

1240 - KATHY JANIGA AND CHRIS LONG BACK ON SITE TO EAT LUNCH

1250 - GARY AND GREG SETTING UP EQUIPMENT FOR AREA 22 DR DITCH FISHING LOCATION.

1300 - CHRIS LONG AND KATHY JANIGA GO TO BUILDING 211 TH  
GO TO MEET GARY AND GREG AT PUMPHOUSE #1 TO COLLECT  
FISH IN DRAWDAGE DITCH (AREA 22).

1315 - DRAG BOAT TO CREEK FROM PUMPHOUSE #1. GREG AND I  
WILL SHOCK FISH IN FRONT OF BOAT AND CHRIS LONG WILL  
PUSH BOAT UPSTREAM. KATHY JANIGA ONSHORE COLLECTING PICTURE

1300 - FINISHED STRETCH OF DITCH FROM CLAM BOX LOCATION #5  
CLAM BOX LOCATION #6 (BEAVER POND). DID NOT GET VERY MANY  
LARGE FISH. WE WILL SHOCK UPSTREAM OF THE BEAVER POND  
TRY TO COLLECT REMAINING FISH FOR THESE SAMPLES AT THE  
AREA.

- GARY AND CHRIS GO TO GET VEHICLES. KATHY AND GREG  
UP EQUIPMENT IN BEAVER POND.

1515 - GARY AND CHRIS BACK AT BEAVER POND WITH VEHICLES. BEGAN  
UPSTREAM OF BEAVER DAM. GARY ROWING BOAT UPSTREAM, GREG A  
CHRIS SHOCKED

Continued on Page

Read and Understood By

  
Signed

11/8/94  
Date

  
Signed

11/11  
Date

1600 - SAMPLING OF AREA UPSTREAM OF BEAVER DAM COMPLETE  
EVERYONE PROCESSING THE SAMPLES FOR THIS AREA. THE FISH  
WAS RECORDED FOR THE FISH:

LARGEMOUTH BASS (8 CAUGHT, 6 KEPT, SEE BELOW)

- ① LENGTH = 229 mm  
② LENGTH = 242 mm  
③ LENGTH = 266 mm THESE WERE KOR  
④ LENGTH = 253 mm  
⑤ LENGTH = 239 mm  
⑥ LENGTH = 223 mm  
⑦ LENGTH = 165 mm  
⑧ LENGTH = 155 mm

CARP (common) (3 CAUGHT, 3 KEPT, SEE BELOW)

- ① LENGTH = 310 mm
  - ② LENGTH = 363 mm
  - ③ LENGTH = 289 mm

BLUEGILL (MANY CAUGHT, 10 LARGEST MEASURED BELOW)

- ① LENGTH = 160.6 mm
  - ② LENGTH = 140 mm
  - ③ LENGTH = 145 mm
  - ④ LENGTH = 159 mm
  - ⑤ LENGTH = 138 mm
  - ⑥ LENGTH = 129 mm
  - ⑦ LENGTH = 127 mm
  - ⑧ LENGTH = 127 mm
  - ⑨ LENGTH = 126 mm
  - ⑩ LENGTH = 125 mm

BLACK CRAPPY (5 CAUGHT, 5 KILLED, SEE BELOW)

- ① LENGTH = 170 mm
  - ② LENGTH = 152 mm
  - ③ LENGTH = 189 mm
  - ④ LENGTH = 182 mm
  - ⑤ LENGTH = 190 mm

**Continued on Page**

**Read and Understood By**

*Chf by*  
Signed

11/8/94  
Date

Kathy Finigan  
Signed

EEL (8 CAUGHT, 7 KEPT, SEE BELOW)

- (1) LENGTH = 285 mm }
- (2) LENGTH = 286 mm }
- (3) LENGTH = 273 mm }
- (4) LENGTH = 271 mm } THESE WERE KEPT.
- (5) LENGTH = 253 mm }
- (6) LENGTH = 225 mm }
- (7) LENGTH = 210 mm }
- (8) LENGTH = 170 mm }

1655 - FINISHED PROCESSING SAMPLES. CLEANING/ PACKING UP.

1705 - FINISHED CLEANING/ PACKING UP. GARY AND GREG GO TO 6  
SIENE FROM POND AREA AND CHRIS AND KATHY GO TO DRY  
KATHY OFF AT MAIN GATE.

1715 - KATHY JANZON OFFSITE FOR DAY.

- CHRIS LONG GOES TO BUILDING ZII TO DROP OFF EQUIPMENT  
TACK TO TODD WALTMEYER ABOUT USING THE BAY IN BUILD  
ZII TO DRY OUT SIENE. TODD SAYS DRY.

1725 - ALL EQUIPMENT IN STORAGE ROOM. GARY AND GREG DECIDE  
WAIT UNTIL TOMORROW TO LAY OUT SIENE IN BAY OF  
ZII TO DRY.

- MOVE BOAT TO BEHIND BUILDING ZO1.

1735 - EVERYONE OFFSITE FOR DAY

*Chris Long*  
11/8/94

Continued on Page

Read and Understood By

*Chris Long*  
Signed

11/8/94  
Date

*Kathy Janzon*  
Signed

11/14/  
Date

WEDNESDAY NOVEMBER 9, 1994

WEATHER: SUNNY, CLEAR, WARM, HIGH IN THE 50'S. FEELS FOR THE TEMPERATURE TO RISE INTO THE LOW 70'S

0730 - CHRIS LONG ON SITE AT MAIN GATE.

0745 - KATHY JANIGA ON SITE AT MAIN GATE.

0750 - GREG AND GARY ON SITE AT MAIN GATE.

- EVERYONE GOES TO PULL UP BOAT AND EQUIPMENT

0805 - EVERYONE MOVING TO POND.

- GREG AND GARY SAY THEY WILL GO OUT IN BOAT AND PULL UP THE NETS AND GATHER THE FISH IN THE BOAT THEN THEM BACK TO SHORE FOR PROCESSING SAMPLES

0810 - ORGANIZING THE EQUIPMENT AT THE POND.

0820 - GREG AND GARY LAUNCH BOAT AND PREPARE TO PULL UP

0825 - GREG AND GARY BEGIN PULLING UP FIRST NET.

0835 - FIRST NET PULLED IN. GREG AND GARY MOVE TO SECOND NET

0845 - SECOND NET PULLED IN. GREG AND GARY MOVE TO THIRD

0850 - THIRD NET PULLED IN. GREG AND GARY ARE REDEPLOYING NETS. IT APPEARS THEY ONLY CAUGHT ONE CATFISH AND WOULD GET THREE.

0900 - ALL THREE NETS ARE RESET. GREG AND GARY BACK TO PROCESS FISH CAUGHT. THEY SAY THEY ONLY GOT CATFISH BUT ALSO ANOTHER SPECIES (WHITE PERCH) WHICH KEEP. SEE NEXT PAGE FOR RECORD OF FISH KEPT:

Continued on Page

Read and Understood By

*Chris Long*

Signed

11/9/94

Date

*Kathy Janiga*

Signed

## CATFISH (1 CAUGHT, 1 KEPT, SEE BELOW)

① LENGTH = 432 mm

## WHITE PERCH (6 CAUGHT, 6 KEPT, SEE BELOW)

① LENGTH = 241 mm

② LENGTH = 216 mm

③ LENGTH = 222 mm

④ LENGTH = 223 mm

⑤ LENGTH = 212 mm

⑥ LENGTH = 224 mm

0925 - PACKING UP EQUIPMENT. GETTING READY TO MOVE TO MARUMSCO CREEK.

(950) - Pat (Guard) opens gate to bay. Gary and Greg load boat in water. Load up boat w/ supplies, nets. Put fish van.

1005 - Gary and Greg and Chris drive boat along bay to creek. Kathy takes van to ridge to watch fishing.

1030 - Gary, Greg and Chris enter Marumsco Creek and start fishing with nets - set up net at base of working way up creek - electric fishing

1200 Gary goes under fence - They caught some perch but the water is deep, that fish are not being shocked. Gary and Kathy go get truck. They will set more nets.

1215 Lunch break.

1250 Lunch over. Get equipment out to set nets.

1310 At mouth of creek, drag net (to shore to) (seining) capture fish.

1330 Quit seining at mouth. Go land to set nets to set. Try again upstream.

Continued on Pa

Kathy Janign

Signed

11-9-94

Date

Read and Understood By

Chophy

Signed

11

1400 Gary, Greg, and Chris dock boat. Process  
Caught.

White Perch (17 caught, 10 kept, see below) \*

(1)	Length =	181 mm
(2)	"	175
(3)	"	182
(4)	"	166
(5)	"	155
(6)	"	155
(7)	"	149
(8)	"	157
(9)	"	147
(10)	"	147

\* 10 LARGEST KEPT

Rest of white perch released.

Blue Gill (12 caught, 10 kept, see below) \*

(1)	Length =	157 mm
(2)	"	163
(3)	"	153
(4)	"	146
(5)	"	152
(6)	"	155
(7)	"	164
(8)	"	135
(9)	"	132
(10)	"	124

\* 10 LARGEST KEPT.

Black Crappie (1 caught)

(1) Length = 19 1/2 mm

Please rest of fish.

1430 Gary and Greg set 3 nets in creek.

1500 FINISHED SETTING THE NETS. CLEANING UP AREA, PACK EQUIPMENT AND LOAD BOAT.

1520 FINISHED PACKING UP, MOVING TO BOWER POND

Continued on Pg

Read and Understood By

Clayton  
Signed

11/9/94  
Date

Kathy Janice  
Signed

11/

1530 - ARRIVED AT BEAVER POND, PREPARING TO COLLECT FISH UPSTREAM OF BEAVER DAM. KATHY JAFFA, GARY AND GR. GO TO SHOT FISH.

1615 - FINISHED SHOCKING AREA UPSTREAM OF BEAVER DAM. EVERYONE PROCESSING THE SAMPLES FOR THIS AREA. THE FOLLOWING W. RECORDED FOR THE FISH:

BLACK CRAPPY (6 CAUGHT, 5 KEPT, SEE BELOW)

- (1) LENGTH = 175 mm
- (2) LENGTH = 193 mm
- (3) LENGTH = 184 mm
- (4) LENGTH = 162 mm
- (5) LENGTH = 190 mm

EEL (3 CAUGHT, 2 KEPT, SEE BELOW)

- (1) LENGTH = 295 mm
- (2) LENGTH = 265 mm

NOTE: ALSO QUITE A FEW BULLHEADS WERE CAUGHT BUT NONE WERE LARGE ENOUGH TO KEEP.

1630 - FINISHED PROCESSING FISH. PACKING UP EQUIPMENT/BOAT.

1645 - FINISHED PACKING UP. MOVING TO BUILDING 211.

1655 - EVERYONE AT BUILDING 211 UNLOADING EQUIPMENT/BOAT. <sup>MAY</sup> OPEN <sub>CL 115</sub> DOORS IN BAY FOR BUILDING 211 TO DRY OUT. GREG AND GARY NOT TD.

1705 - ALL EQUIPMENT/BOAT UNLOADED.

1715 - EVERYONE OFF SITE FOR DAY.

*Chifley*  
11/9/94

Continued on Page

Read and Understood By

*Chifley*  
Signed

11/9/94  
Date

Kathy Jaffa  
Signed

11/14/94  
Date

~~THURSDAY~~ NOVEMBER 10, 1994

WEATHER: COLD, RAINY, HIGH IN THE 40'S. FORECAST FOR THE REST OF THE DAY IS COOL WITH A HIGH IN THE 50'S.

0745 - CHRIS COMES ON SITE AT MAZON GATE.

0850 - KATHY JANEKA ON SITE AT MAZON GATE

- GARY AND COREG (AQUATIC SYSTEMS, INC.) ON SITE AT MAZON GATE

0755 - MOVING TO PICK UP BOAT/EQUIPMENT.

0805 - HAVE ALL EQUIPMENT/BOAT, MOVING TO POND TO PULL NETS

0815 - SETTING UP EQUIPMENT AND LAUNCHING BOAT AT POND.

0820 - GARY AND GREB MOVE OUT TO RETRIEVE NETS.

0825 - FIRST NET ~~REMOVED~~ RETRIEVED <sup>REMOVED</sup> ON 11/10/94

0830 - SECOND NET RETRIEVED.

0835 - LAST NET RETRIEVED. GARY AND GREB COMING BACK TO SHORE TO PROCESS SAMPLES.

0840 - GARY AND GREB BACK AT SHORE. TAKING BOAT OUT OF WATER AND ORGANIZING EQUIPMENT.

0845 - BEGAN PROCESSING SAMPLES. THE FOLLOWING WAS RECORDED FOR CHANNEL CATFISH (1 CAUGHT, 1 KEPT, SEE BELOW)

(1) LENGTH = 395 MM

WHITE PERCH (6 CAUGHT, 4 KEPT, SEE BELOW)

(1) LENGTH = 209 MM

(2) LENGTH = 211 MM

(3) LENGTH = 225 MM

(4) LENGTH = 230 MM

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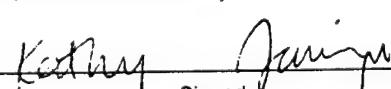
Read and Understood By



Signed

11/10/94

Date



Signed

11/11/94

0855 - ALTHOUGH WE ARE STILL SHORT ON CATFISH, WE CAN NOT ELECTROFISH DUE TO THE WEATHER; THEREFORE, WE CALL OUT FOR FISH SAMPLING AT THE POND.

0900 - MOVING TO MARUMSCO CREEK LOCATION

0905 - GARY AND GREGG SETTING UP EQUIPMENT AND LAUNCHING BOAT UNDER FENCE.

0920 - FIRST NET RETRIEVED

0935 - SECOND NET RETRIEVED

0950 - LAST NET RETRIEVED. GARY AND GREG LOADING BOAT AND ANKLES TO PROCESS SAMPLES.

1000 - BEGUN PROCESSING SAMPLES. THE FOLLOWING WAS RECORDED FOR MARUMSCO CREEK:

YELLOW PERCH (7 CAUGHT, 7 KEPT, SEE BELOW)

- (1) LENGTH = 206 mm
- (2) LENGTH = 175 mm
- (3) LENGTH = 230 mm
- (4) LENGTH = 210 mm
- (5) LENGTH = 190 mm
- (6) LENGTH = 260 mm
- (7) LENGTH = 245 mm

NOTE: ALTHOUGH THE 2 SMALLEST PERCH WERE LESS THAN 75% OF THE LENGTH OF THE LARGEST, WE KEPT THEM TOO DUE TO THEM BEING DEAD.

COMMON CARP

- (1) LENGTH = 520 mm
- (2) LENGTH = 435 mm

1010 - ALL HAD ALTHOUGH WE ARE SHORT ON SOME FISH SPECIES, WE MAY HAVE A LARGE ENOUGH VARIETY TO GET ADEQUATE SAMPLES.

Continued on Page

Read and Understood By

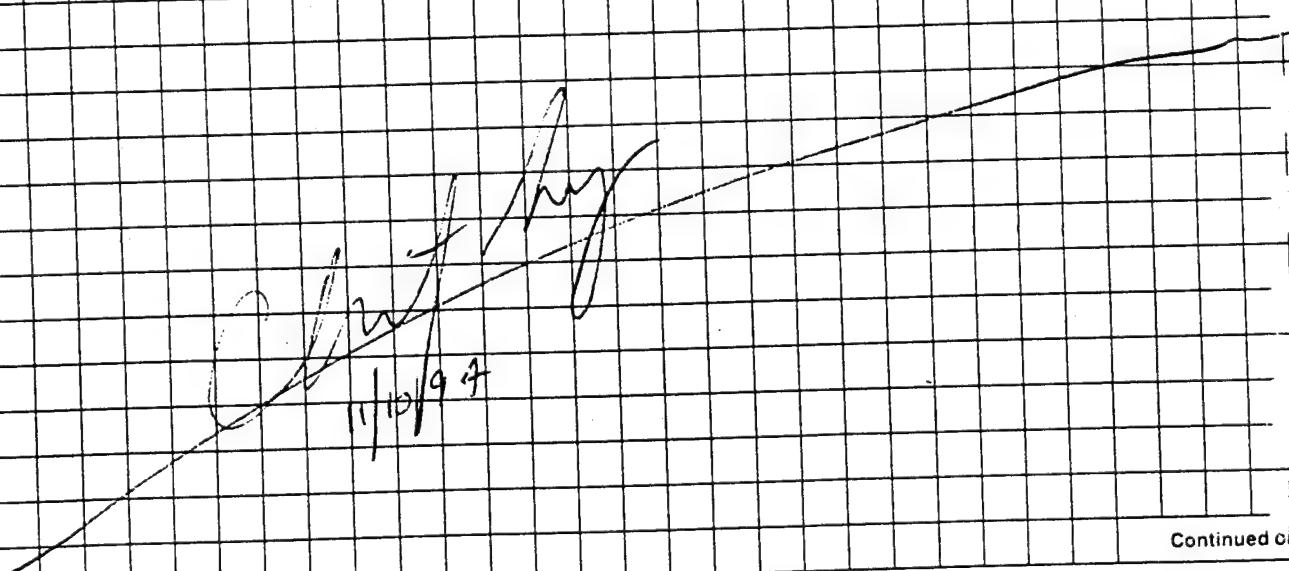
*Cliffby*  
Signed

11/10/94  
Date

*Kathy Young*  
Signed

11

- 1015 - MOVING TO AREA 22 DITCH, WE DISCUSSED THAT DUE  
THE WEATHER, ELECTROFISHING CAN NOT BE COMPLETED.  
WE WILL TRY TO SETE UPSTREAM OF THE BEAVER DAM,  
TO PULL UP THE SETE THE GO TO AREA 22 DITCH.
- 1030 - EVERYONE ARRIVED AT AREA 22 DITCH C BEAVER FOR  
GARY AND GREG WILL TRY TO SETE THE BEAVER FOR
- 1130 - AFTER SEVERAL ATTEMPTS AT SETING UPSTREAM OF THE BOAT  
NO CARP OR EEL WERE BEING CAUGHT, ONLY MORE CRAPPY AND  
THEREFORE, WE CALL IT QUIT. WE ORGANIZE THE EQUIPMENT  
TO SWIMMING 201/211 TO PICK UP THE OTHER BOAT AND REMA  
EQUIPMENT.
- 1140 - BACK AT SWIMMING 201/211 ORGANIZING EQUIPMENT AND GREG AND  
PLAN ON CHANGING CLOTHS PRIOR TO LEAVING SINCE THEY BOTH  
DOWN UNDERWATER ABOVE THE TOPS OF THEIR WAISTERS
- 1220 - FINISHED PACKING UP EQUIPMENT. MOVING TO MAIN GATE  
- AT MAIN GATE GARY AND GREG REPACK CLOTHES WITH
- 1230 - EVERYONE OFFSITE FOR DAY



Continued on

Read and Understood By

*Cliff Key*  
Signed

11/10/94  
Date

*Kathy Janis*  
Signed

MONDAY + NOVEMBER 21, 1994

WEATHER: COOL AND RAINING, HIGH IN THE 50'S. FORECAST THE RAIN TO STOP BUT GET COLD.

1300 - CHRIS LONG ONSITE AT MAIN GATE  
- IT'S POURING DOWN RAIN.

1340 - GARY AND GREG ONSITE AT MAIN GATE.  
- RAIN HAS SLOWED TO A DROPOLE.

1345 - MOVING TO PICK UP BOAT & EQUIPMENT

1355 - MOVING TO AREA IN FENCE NEAR LOCATION #3 TO  
IF WE CAN GET BOAT UNDER FENCE LIDDE CAST TIME.

1400 - LOOKS AS IF WE CAN GET THE BOAT UNDER THE FENCE  
EVEN THOUGH THE TIDE IS HIGHER THAN PREVIOUS TIME.  
- GETTING EQUIPMENT READY.

1415 - GARY AND GREG LAUNCH THE BOAT AND ROW TOWARDS  
LOCATION #4. CHRIS LONG STAYS ONSHORE DUE TO B  
WEATHER.

1425 - GARY AND GREG ARRIVE AT LOCATION #4. ONE AT A  
SNAG WAS CUT AT ABOUT 5' LENGTH. THEY FOUND AN  
END BUT IT WAS ALSO CUT. GARY AND GREG IN THE  
LOOKING FOR BASKETS/ROPE.

1435 - GARY FINDS THE BASKETS. GARY AND GREG BRING ONE  
TO SHORE FOR PROCESSING SAMPLES. GARY THEN GOES TO THE  
WATER QUANTITY SAMPLES/DATA WHILE GREG COLLECTS CHIPS.

1445 - BASKET A - 1 DEAD COLLECTED FOR SAMPLE  
(HAS TIE) 20 LIVE COLLECTED FOR SAMPLE  
BASKET B - 1 DEAD COLLECTED FOR SAMPLE  
(NO TIE) 20 LIVE COLLECTED FOR SAMPLE

Continued on Pg:

Chris Long

Signed

11/21/94

Date

Read and Understood By

Kathy Jumper

Signed

11

- 1450 - GARY AND GREG RETIE BASKETS CLOSED, RETIE ROPE TO  
AND BASKETS AND TAKE BASKETS BACK OUT INTO BOAT  
LOCATION #4.

1455 - MOVING TO LOCATION #3.

1500 - GARY AND GREG ARRIVE AT LOCATION #3 IN BOAT. CHRIS  
LAWIS STAYS ON SHORE. GARY RETRIEVING BASKETS.

1505 - GARY COLLECTING SAMPLES FROM BASKET A, GREG COLLECTING  
SAMPLES FROM BASKET B.

1510 - BASKET A - 1 DEAD COLLECTED FOR SAMPLE  
(HAS TIE) 20 LIVE COLLECTED FOR SAMPLE  
BASKET B - 1 DEAD COLLECTED FOR SAMPLE  
(NO TIE) 20 LIVE COLLECTED FOR SAMPLE  
- BASKETS RETIED CLOSER, THEN PLACED BACK ON WATER.  
- GARY COLLECTS WATER QUALITY SAMPLE / DATA.

1515 - GARY AND GREG BOARDING BOAT TO AREA WHERE THEY  
PULL THE BOAT OUT UNDER THE FENCE; AND PULL BOAT  
TRUCK PACKING UP EQUIPMENT AND LOADING BOAT.

1530 - MOVING TO BRIDGE OVER MATUMSCO CREEK

1540 - CHRIS LAWIS, GARY AND GREG ARRIVE AT BRIDGE OVER MATUMSCO CREEK  
- GARY AND GREG LAUNCH BOAT AND GO TO RETRIEVE BASKETS  
LOCATION #1

1545 - BASKETS RETRIEVED. GREG COLLECTING CLAM SAMPLES, GARY  
COLLECTING WATER QUALITY SAMPLES

1550 - BASKET A - 9 DEAD COLLECTED FOR SAMPLE  
(HAS TIE) 2 LIVE COLLECTED AND COMBINED WITH BASKET A  
BASKET B - 14 DEAD COLLECTED FOR SAMPLE  
(NO TIE) 10 LIVE COLLECTED AND COMBINED WITH BASKET B

# *SECRET A LOVE*

*Chitkay*  
Signed

Signed.

11/21/94

Date \_\_\_\_\_

Kathy Jumper  
Signed

Signed

14

550-(CONT.) NO CLAMS REMAINING AT THIS LOCATION, REMOVED BOTH BASKETS. GARY AND GREG DRAGGED BOAT BACK TO TRUCK.

555 - BOAT LOADED BACK ONTO TRAILER. MOVING TO LOCATION #2. WE WILL WALK DOWN ALONG THE PATH BESIDE THE CREEK TO ACCESS LOCATION #2.

1605 - WE ARRIVE AT LOCATION #2. GARY AND GREG WALK INTO THE CREEK TO RETRIEVE THE BASKETS.

1610 - BASKETS ARE RETRIEVED AND BROUGHT TO SHORE. GREG COLLECTING SAMPLES FROM BASKET A, GARY COLLECTING WATER QUANTITY SAMPLES / DATA AND BASKET B SAMPLES.

1615 - BASKET A - 4 DEAD COLLECTED FOR SAMPLE (HAS JDE) - 10 LIVE COLLECTED FOR SAMPLE (20 REL)  
BASKET B - 20 DEAD COLLECTED FOR SAMPLE (NO JDE) 20 LIVE COLLECTED FOR SAMPLE

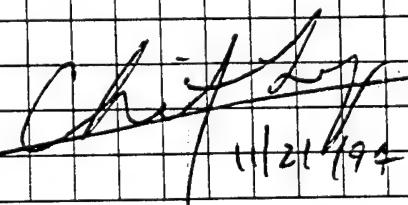
1620 - BASKETS RETIED CLOSED AND GARY AND GREG TAKING BACK OUT INTO THE CREEK.  
- MOVING BACK TO TRUCK

1630 - BACK AT THE TRUCK ORGANIZING EQUIPMENT. <sup>11/21</sup> "11/21"

1640 - MOVING TO DEP OFF BOATS BEHIND BUILDING 201.

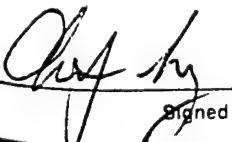
1650 - AT BUILDING 201 DROPPING OFF BOATS

1700 - EVERYONE OFF SITE FOR DAY

  
11/21/94

Continued on Page

Read and Understood By

  
Signed

11/21/94  
Date

  
Signed

11/28  
D:

TUESDAY November 22, 1994

WEATHER: CLOUDY, SUNNY, COOL, HIGH IN THE LOW 50'S. FURST THE SAME WARMING UP TO THE 60'S.

0750 - CHRIS LOOKS, GREG AND GARY ON SITE AT MAIN GATE  
- SLOWING IN AND MOVING TO PICK UP BOATS AT BURROWING

0800 - GOT THE BOATS AND NOW MOVING TO TOMBSTONE LOCATION TO COLLECT CLAMS AT LOCATION #8

0805 - ARRIVE AT TOMBSTONE LOCATION, ORGANIZING EQUIPMENT AND CALIBRATING METERS.

0820 - GARY RUSHES OUT TO LOCATION #8 TO GET WATER QUALITY SAMPLES / DATA AND RETRIEVE THE BASKETS. CHRIS AND GREG WAIT ON SITE WHERE WE WILL PROCESS SAMPLES.

0830 - GARY HAS BOTH BASKETS AND IS BRINGING THEM TO FURST PROCESSING. GREG PROCESSING SAMPLES FOR BASKET A,  
GARY PROCESSING SAMPLES FOR BASKET B.

0835 - BASKET A - 0 DEAD  
(HAS FISH) 20 LIVE COLLECTED FOR SAMPLE  
BASKET B - 1 DEAD COLLECTED FOR SAMPLE  
(NO FISH) 20 LIVE COLLECTED FOR SAMPLE

0840 - BASKETS RETIGHTENED. GARY TAKING THEM BACK ON INTO THE WATER. THEN MEETS CHRIS AND GREG BACK THE TRUCK TO LOAD BOAT ONTO TRAILER

0845 - BOAT LOADED AND MOVING TO LOCATION #5.

0850 - ARRIVE AT WELL HOUSE #1. ORGANIZING EQUIPMENT TO WALK LOCATION #5.

Continued on Pg

Read and Understood By

*Chris by*

Signed

11/22/94

Date

*Kathy Jasek*

Signed

11/

0855 - MOVING TO LOCATION #5

0900 - ARRIVE AT LOCATION #5. GARY COLLECTS WATER QUALITY SAMPLES, THEN MOVES TO RETRIEVE BASKETS. GARY PROCESSING SAMPLES, BOTH BASKETS.

0905 - BASKET A - 1 DEAD COLLECTED FOR SAMPLE  
(HAS TIE) - 20 LIVE COLLECTED FOR SAMPLE (23 REMAIN)  
BASKET B - 2 DEAD COLLECTED FOR SAMPLE  
(NO TIE) 20 LIVE COLLECTED FOR SAMPLE

0910 - GARY RETRIES BASKETS CLOSER AND PLACE THEM BACK ON THE CAR.  
- MOVING BACK TO TRUCK.

0915 - BACK AT TRUCK. MOVING TO LOCATION #7 TO COLLECT WATER QUALITY DATA/SAMPLES FOR COMPLETENESS.

0920 - ARRIVE AT LOCATION #7. GARY AND GREG ORGANIZE EQUIPMENT, THEN GO TO COLLECT WATER QUALITY DATA/SAMPLES.

0925 - WATER QUALITY DATA/SAMPLES HAVE BEEN COLLECTED FOR LOCATION #7.  
MOVING TO LOCATION #6.

0930 - ARRIVE AT THE BEAVER POND (LOCATION #6). GARY AND GREG COLLECTING WATER QUALITY SAMPLES/DATA AND ORGANIZING EQUIPMENT.

0935 - GARY AND GREG LAUNCH THE BOAT TO RETRIEVE THE BASKETS.

0938 - BASKET RETRIEVED AND GREG COLLECTING SAMPLES.

0940 - BASKET A NO LONGER AT LOCATION  
BASKET B - 15 DEAD COLLECTED FOR SAMPLE  
(NO TIE) 3 LIVE COLLECTED FOR SAMPLE  
- BASKET B REMOVED FROM LOCATION. NO CLEANS REMAIN  
MOVING TO TRUCK.

Continued on Page \_\_\_\_\_

Read and Understood By



Signed

11/22/94  
Date



Signed

11/

0950 - BOAT LOADED BACK INTO TRAILER AND DRIVING TO BUILDING 201 TO DROP OFF BOAT AND SHUCK DEAD CLAMS.

1000 - AT BUILDING 201 ORGANIZING EQUIPMENT/BOAT. PREPARE TO SHUCK DEAD CLAMS AND TREAT WATER SAMPLES (ONE TREATMENT; CURES AND CURE SHUCKING).

1020 - FINISHED TREATING WATER SAMPLES, AND SHUCKING ONE CLAMS. THE FOLLOWING NUMBERS WERE COUNTED: (TISSUE COLLECTED - OTHERS EMPTY)

LOCATION	BASKET	NUMBER
1	A	7
1	B	7
2	A	4
2	B	20
3	A	0
3	B	0
4	A	0
4	B	1
5	A	0
5	B	2
6 <sup>out</sup> 11/22/94	B	15
8	A	0
8	B	0

1030 - CLEANING UP AND PUTTING EQUIPMENT AWAY.

1040 - EVERYTHING CLEANED UP AND ALL EQUIPMENT PUT AWAY, EVERY LEAVES SITE FOR DAY

*Chet by*  
11/22/94

Continued on Page

*Chet by*  
Signed

11/22/94  
Date

Read and Understood By

*Kathy Auger*  
Signed

11/29  
Date

MONDAY DECEMBER 5, 1994

WEATHER: CLOUDY BUT CLEARING AND WARM. HIGH IN THE 60'S

1250 - CHRIS LONG ON SITE AT MAIN GATE

1315 - GARY AND GREG (AQUATIC SYSTEMS) ON SITE AT MAIN GATE  
- SIGN IN AND MOVE TO AREA IN FENCE NEAR LOCATION #3  
TO SEE IF WE CAN GET BOAT UNDER FENCE LIKE LAST TIME.

1320 - MOVE TO GET BOAT AND COME BACK HERE BECAUSE CAN GET BOAT UNDER FENCE.

1335 - HAVE BOAT AND MOVING TO AREA IN FENCE NEAR LOCATION #3

1340 - AT AREA IN FENCE NEAR LOCATION #3 TO ACCESS CREEK FROM UNDER FENCE.

- GARY AND GREG ORGANIZING EQUIPMENT AND PREPARING TO LAUNCH BOAT.

1350 - ALL EQUIPMENT PACKED ON BOAT AND GARY AND GREG ON BOARD. CHRIS LONG TO STAY ON SHORE.  
- MOVING TO LOCATION #4.

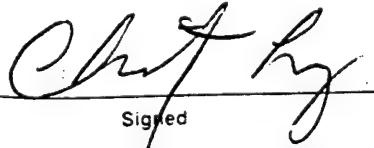
1355 - ARRIVE AT LOCATION #4. LINE ATTACHED TO SNAG CUT  
- GARY AND GREG IN THE BAY LOOKING FOR ROPE/BASKETS.

1400 - ROPE AND BASKETS FOUND. COLLECTING WATER SAMPLES AND POURING BASKETS TO SHORE FOR PROCESSING. GARY PROCESSING WATER SAMPLES/DATA, GREG REMOVING REMAINING ROPE FROM SNAG.

1405 - THE WATER QUALITY SAMPLES/DATA HAS BEEN COLLECTED, AND ALL COLLECTED. GARY AND GREG TAKING BASKETS TO BOAT FOR PHOTOCOPIES. BOAT WAS LEFT AT MOUTH OF MARSHBROOK CREEK TO LOW TIDE.

Continued on Page

Read and Understood By



Signed

12/5/94

Date



Signed

12/9

1410 - BACK AT BOAT. BEGAN PROCESSING CLAM SAMPLES.

BASKET A - 0 DEAD COLLECTED FOR SAMPLE } 131 REMAILED  
(HAS TIE) 20 LIVE COLLECTED FOR SAMPLE }

BASKET B - 1 DEAD COLLECTED FOR SAMPLE } 126 REMAILED  
(NO TIE) 20 LIVE COLLECTED FOR SAMPLE }

\*NOTE: REMAINING CLAMS TO BE DRUMMED.

1420 - FINISHED PROCESSING CLAM SAMPLES. GARY AND GREG ROWING IN MACHIASLIC CREEK TOWARDS LOCATION #3.

(AND GREG)

1425 - GARY AND GREG ARRIVE AT LOCATION #3. GARY COLLECTED WATER QUALITY SAMPLES/DATA, THEN MOVED TO RETRIEVE BASKETS.

1430 - BASKETS RETRIEVED. GARY AND GREG BRANDED THE BASKETS SHORE FOR PROCESSING.

1435 - BACK AT TRAILER PROCESSING CLAM SAMPLES

BASKET A - 0 DEAD COLLECTED FOR SAMPLE } 153 REMAILED  
(HAS TIE) 20 LIVE COLLECTED FOR SAMPLE }

BASKET B - 1 DEAD COLLECTED FOR SAMPLE } 154 REMAILED  
(NO TIE) 20 LIVE COLLECTED FOR SAMPLE }

\*NOTE: REMAINING CLAMS TO BE DRUMMED.

1445 - FINISHED COLLECTING SAMPLES. CLEANING UP EQUIPMENT ON BOAT onto TRAILER.

1455 - FINISHED LOADING EQUIPMENT AND BOAT. MOVING TO TRAILER SITE TO DROP OFF REMAINING CLAMS INTO A DRUM. DROP OFF THE REMOVED BASKETS.

1505 - FINISHED DROPPING OFF CLAMS (WASTE CLAMS) AND REMOVED BASKETS. MOVING TO BEAVER POND (LOCATION #6) TO COLLECT WATER QUALITY SAMPLES/DATA.

1515 - AT BEAVER POND (LOCATION #6) COLLECTING WATER QUALITY SAMPLES/DATA.

1520 - FINISHED COLLECTING THE WATER QUALITY DATA/SAMPLES AT LOCATION #6.

Continued on

Read and Understood By

*Chief Jay*

Signed

12/5/94

Date

*Kathy Jurg*

Signed

1520 (cont.)

- MOVING TO LOCATION #7 TO COLLECT WATER QUALITY DATA/SAMPLES

1525 - ARRIVE AT LOCATION #7 AND COLLECTING WATER QUALITY DATA/SAMPLES

1530 - FINISHED COLLECTING THE WATER QUALITY SAMPLES/DATA AT LOCATION  
- MOVING OUTSIDE THE FIFTEENTH TO COLLECT SAMPLES FROM LOCATIONS  
#1 AND #2.

1535 - ARRIVE AT BRIDGE OVER MARUMSCU CREEK. GARY AND GREG  
ORGANIZING EQUIPMENT. WE WILL WALK DOWN TO LOCATION #  
FIFTEEN.

1540 - MOVING TO LOCATION #2

1550 - AT LOCATION #2. GARY AND GREG COLLECTING WATER QUALITY  
SAMPLES/DATA, THEN GO TO RETRIEVE BASKETS.

1555 - BASKETS BROUGHT TO SHORE. WE DECIDE TO CARRY THEM  
TO THE TRUCK TO PROCESS SAMPLES.

1610 - BACK AT TRUCK. GREG GOES TO COLLECT WATER QUALITY SAMPLES  
FOR LOCATION #1. GARY ORGANIZES EQUIPMENT, THEN BEGINS  
TETRATING WATER SAMPLES.

1615 - GREG PROCESSING CLAM SAMPLES FROM BASKET A, GREG PROCESSING  
CLAM SAMPLES FROM BASKET B, LOCATION #2

1620 - LOCATION #2 CLAM SAMPLES.

BASKET A - 3 DEAD COLLECTED FOR SAMPLE	} 0 REMAIN.
(HAS TIE) - 17 LIVE COLLECTED FOR SAMPLE	
BASKET B - 9 DEAD COLLECTED FOR SAMPLE	} 131 REMAIN.
(NO TIE) 20 LIVE COLLECTED FOR SAMPLE	

\* NOTE: REMAINING CLAMS TO BE INNUMERATED AS WASTE.

1625 - GREG HELPING GARY TETRATE WATER SAMPLES.

1635 - FINISHED TETRATING WATER SAMPLES AND PACKED UP EQUIPMENT Continued on Page  
- EVERYONE OFFSITE FOR DINNER.

Read and Understood By

Chief

Signed

12/5/94

Date

Kathy Jurg

Signed

12/8/

TUESDAY : DECEMBER 6, 1994

WEATHER: FOGGY BUT FOG SHOULD CLEAR. HIGH IN THE 50'S  
FORECAST FOR TEMP TO REACH 60'S

0755 - EVERYONE (CHRIS WNG, GARY, AND GREG) ON-SITE AT MAD:  
- GIVE IN AND MOVE TO PICK UP BOATS AT BUILDING 201.

0800 - BOATS / TRAILER HAULED OUT TRUCK MOVING TO TOMBSTONE  
LOCATION TO SAMPLE AT LOCATION #0.

0805 - AT THE TOMBSTONE LOCATION. GARY AND GREG PREPARE  
EQUIPMENT AND CALIBRATION METERS.

0825 - ALL EQUIPMENT READY. GARY AND GREG LAUNCH BOAT.  
TO GO OUT IN BOAT TO GET WATER QUALITY SAMPLES,  
AND TO RETRIEVE BASKETS, THEN BRING BASKETS TO SHORE  
PROCESSING.

0835 - WATER QUALITY SAMPLES/DATA COLLECTED AND BASKETS RETRIEVED  
GARY BRINGING BASKETS TO SHORE FOR PROCESSING. CHRIS  
SAMPLES FROM BASKET A, GREG PROCESSING SAMPLES FROM BASKET B.

0845 - BASKET A - 0 DEAD COLLECTED FOR SAMPLE } 70 REMAINING  
(HAS FISH) 20 LIVE COLLECTED FOR SAMPLE }  
BASKET B - 1 DEAD COLLECTED FOR SAMPLE } 36 REMAINING  
(NO FISH) 20 LIVE COLLECTED FOR SAMPLE }

\* NOTE: REMAINING CLAMS TO BE DRUMMED AS LIV.

- CLEANING UP AREA AND PACKING EQUIPMENT INTO TRUCK.

0850 - FINISHED CLEANING UP AREA AND PACKING EQUIPMENT  
- MOVING TO WAREHOUSE #1 TO WAIT FOR LOCATION #5.

0855 - ARRIVED AT WAREHOUSE #1 AND ORGANIZING EQUIPMENT  
CARRY IN, THEN WE GO TO LOCATION #5.

0900 - ARRIVED AT LOCATION #5. GARY AND GREG COLLECTED  
WATER QUALITY SAMPLES/DATA.

Continued on page 2

Read and Understood By

Chris Wng  
Signed

12/6/94  
Date

Kathy Jorg  
Signed

12/

0905 - GARY GOES TO RETRIEVE BASKETS WHILE GREG FINISHES THE WATER QUALITY SAMPLING. ONCE THEY HAVE EVERYTHING, WE LEAVE THE TRUCK TO PROCESS SAMPLES THERE.

0910 - ARRIVE AT TRUCK AND BEGIN PROCESSING SAMPLES. CHRIS PULLS SAMPLES FROM BASKET A; GARY PROCESSING SAMPLES FROM BASKET B.

0915 - BASKET A -	2 DEAD COLLECTED FOR SAMPLE }	0 REMAINING
(HAS TIE)	21 LIVE COLLECTED FOR SAMPLE }	
BASKET B -	6 DEAD COLLECTED FOR SAMPLE }	93 REMAINING
(NO TIE)	20 LIVE COLLECTED FOR SAMPLE }	

\* NOTE: REMAINING CLAMS TO BE DRUMMED IN

0920 - GARY AND GREG PACKING UP EQUIPMENT INTO TRUCK. THEY DROP OFF BASKETS AT OLD SDS TRAINING SITE THEN MEET CHRIS AT BUILDING 211 TO PROCESS DEAD CLAMS.

0925 - EVERYONE AT BUILDING 211. GARY TITRATING WATER. GREG SHUCKING AND PROCESSING DEAD CLAMS.

0940 - FINISHED SHUCKING AND PROCESSING DEAD CLAMS. THE NUMBERS WERE COUNTED: (TISSUE COLLECTED - OTHERS EMPTY)

LOCATION	BASKET	NUMBER
2	A	3
2	B	0
3	A	0
3	B	1
4	A	0
4	B	1
5	A	2
5	B	7
8	A	0
8	B	1

0940 - ALSO FINISHED TITRATING WATER SAMPLES. GARY AND GREG RE-TRUCK AND BOAT DUE TO SAMPLING BEING COMPLETED.

Continued on Page

0955 - TRUCK AND BOAT PACKED. EVERYONE OFF SITE FOR DAY.

Read and Understood By

*Chris L*  
Signed

12/6/94  
Date

*Kathy George*  
Signed

12/6  
D

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# **APPENDIX B**

**PHOTO LOG**

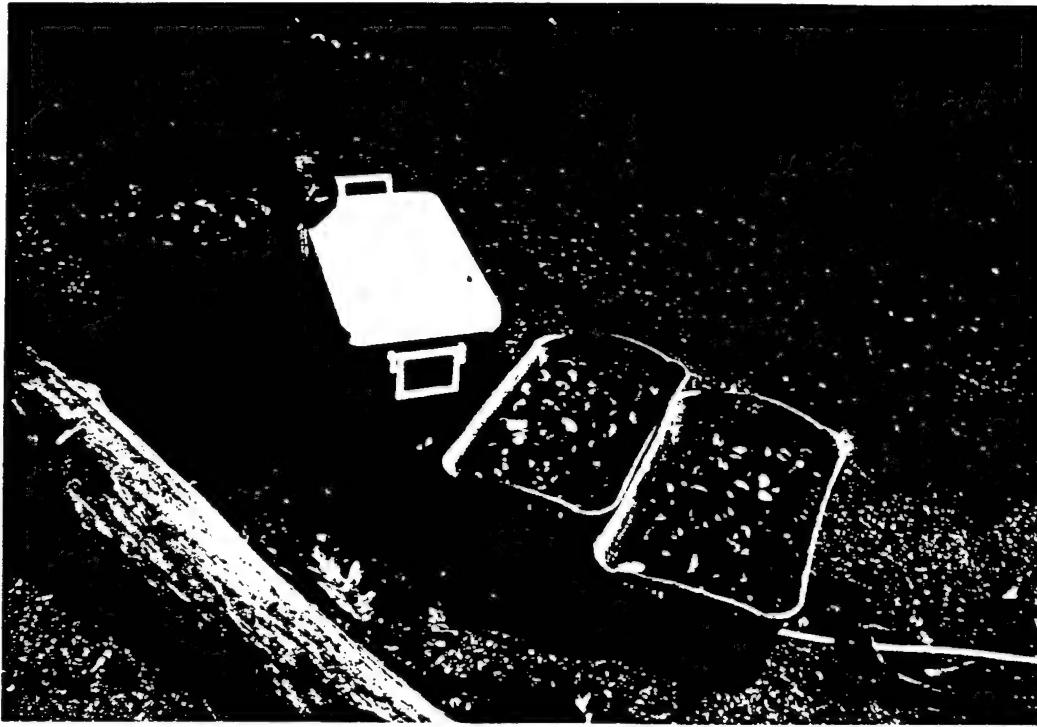
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October 9, 1994 Clams before distribution.

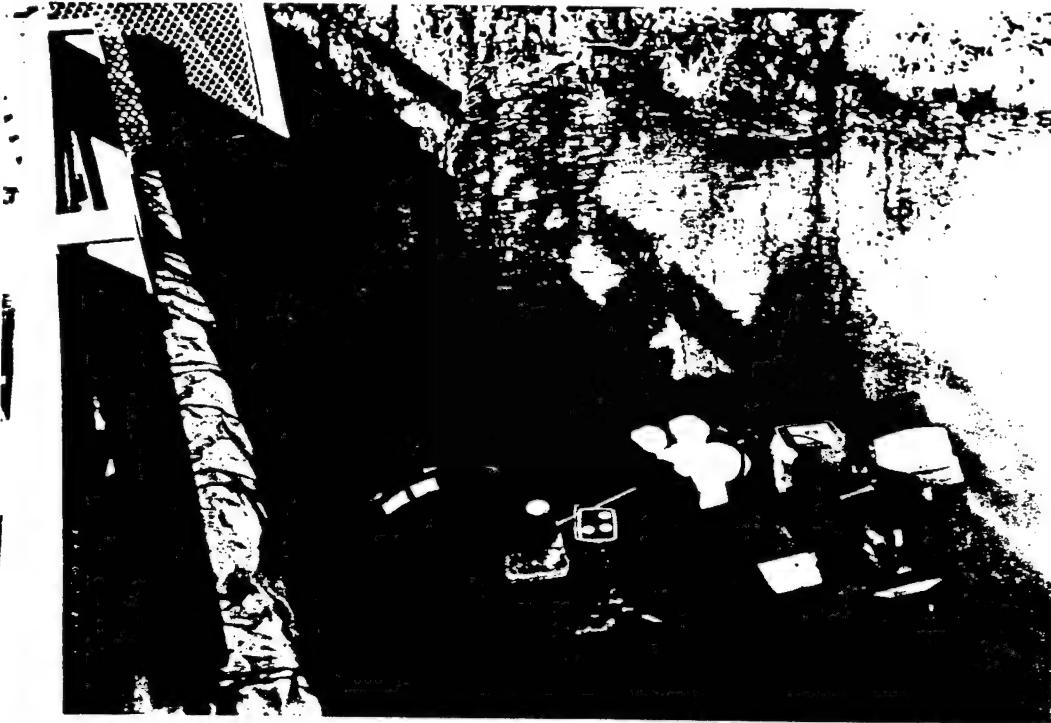


October 9, 1994 16 clam baskets at staging area.

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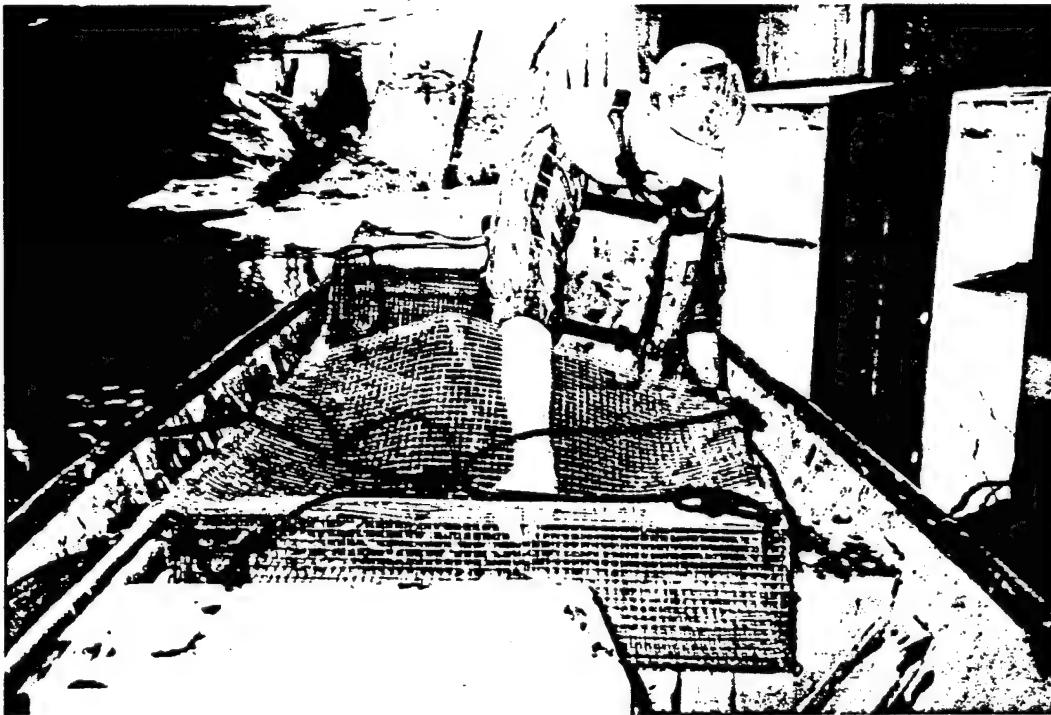
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November 7, 1994

Water quality samples collected at Location 1.



November 7, 1994

Clam sample collected at Location 1.

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November 7, 1994      Clam sample collected at Location 2.



October 9, 1994    Location 3 - Marumsco Creek near Landfill 2.

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October 9, 1994 Placing 2 clam baskets at Location 4.



October 9, 1994 Downstream of Location 5.

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November 7, 1994      Retrieving clam baskets for sampling at Location 5.



October 9, 1994      Placing 2 clam baskets at Location 6.

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October 9, 1994 Location 7 - Drainage Ditch upstream of the Main Compound.



October 24, 1994 Retrieving clam baskets for sampling at Location 8 (Belmont Bay approximately 150 feet from WRF).

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November 8, 1994      Fish collection at the pond using the seine net.



November 8, 1994      Checking the seine net for fish.

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November 8, 1994      Measuring the fish collected from the pond.



November 9, 1994      Retrieving the gill nets from the pond.

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November 8, 1994

Electrofishing in the drainage ditch from Location 5 to Location 6.



November 8, 1994

Fish caught with electrofishing.

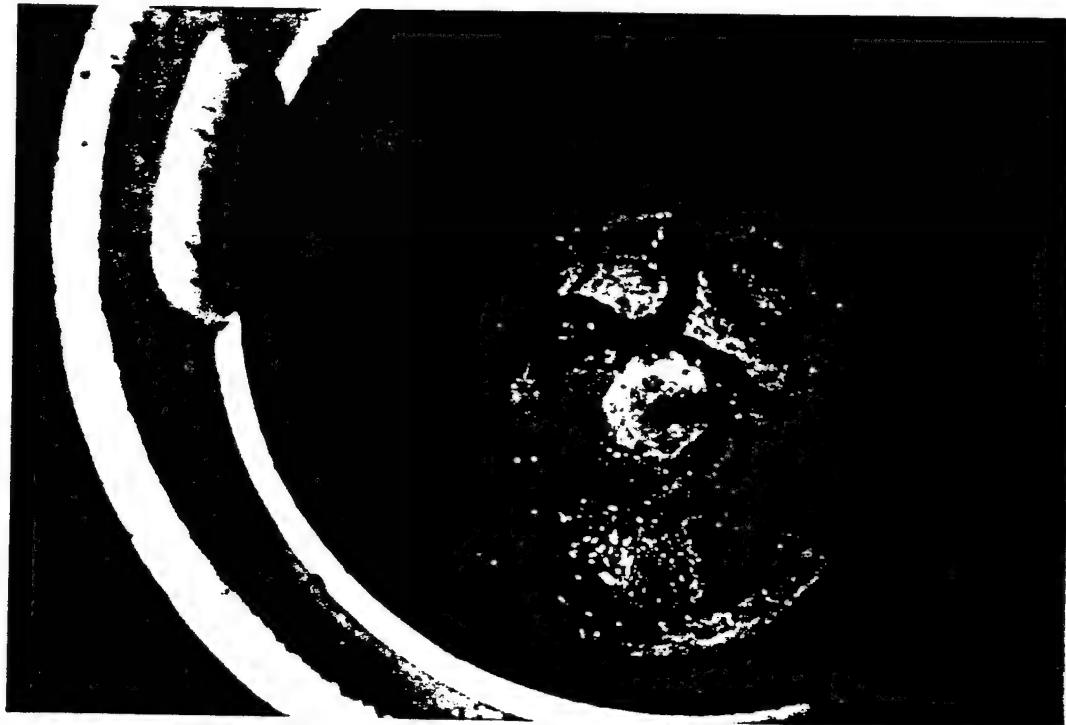
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November 8, 1994      Electrofishing in drainage ditch upstream of beaver dam.



November 8, 1994      8 eels caught in drainage ditch.

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November 9, 1994      Electrofishing in Marumsco Creek (near Location 3).



November 9, 1994      Gill net set overnight across Marumsco Creek.

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# **APPENDIX C**

**FISHING PERMIT**

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# COMMONWEALTH of VIRGINIA

*Department of Game and Inland Fisheries*

## SCIENTIFIC COLLECTION/SALVAGE PERMIT

October 31, 1994

Permit No. SCP94116

To whom it may concern:

Permission is granted to Jeffrey Briggs, Principal Permittee, and Gary J. Kenderes, Gregory M. Styborski, Michael F. Davison, Robert L. Shema, Christopher Long, Kevin McCreanor, Kathy Janiga, and Keith Schenkel, Sub-Permittees, of Earth Technology Corp., 1420 King Street, Suite 200, Alexandria, VA 22314, to collect freshwater fishes in the waters of the Woodbridge Research Facility, Prince William County, Virginia, with nets, seines, electro-fishing gear, and by hand for scientific purposes under the following special conditions:

1. No species currently listed by the U.S. Fish and Wildlife Service, or the Virginia Dept. of Game and Inland Fisheries, as threatened or endangered may be intentionally taken under this permit.
2. If incidental take of threatened or endangered species does occur, the permittee is required to notify this Department within five (5) working days of the species, location (county, quad), and number. More specific information (as specified in the reporting requirements) shall be given to the Department within ninety (90) days.
3. Any collections falling within waters defined by this Department as Endangered Species Waters must be coordinated through this Department (Nongame Aquatic staff, 703/552-6992). A sampling plan including stream names must be provided to this Department prior to any sampling.
4. If necessary, the permittee is authorized to take (remove) up to 5 individuals or 20% of the number of specimens (whichever is lower) of any species identified as "State Special Concern" except *Etheostoma osburni* (candy darter) at any collection location. The permittee is also authorized to take (remove) up to 10 individuals of any species not identified as endangered, threatened, or special concern at any collection location if necessary. Justification must be submitted to this Department for the taking (removal) of individuals in numbers greater than indicated above.
5. The permittee will, in advance, advise the State District Fisheries Biologist and the State Game Warden in the county of the date and location collection will be made. Contact must be made with the State District Fisheries biologist at least one week prior to sampling.
6. The permittee is required to submit to this Department a report of all specimens collected by July 31, 1995. This requirement also includes those specimens that were released after identification was made. Report format is attached. FAILURE TO RETURN THIS REPORT WILL RESULT IN NON-ISSUANCE OF FUTURE PERMITS. A negative report should be submitted if collections were not attempted or were unsuccessful.
7. This permit is issued with the understanding that no collections will be made on federal, state, or private property without the prior approval and necessary permits from the landowners involved.

NOV 04 '94 17:11

UDGIFRICHMONFISH

100 MILE

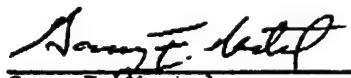
Page 2

SCIENTIFIC COLLECTIONS/SALVAGE PERMIT Permit No. SCP94116

8. A valid Virginia fishing license is required for each person collecting samples by hook-and-line.

9. Sampling gear, boats, or trailers which have been used in states harboring zebra mussels must be cleaned and prepared following the guidelines specified in the attached summary prior to use in waters in the Commonwealth.

This permit expires June 30, 1995.

  
\_\_\_\_\_  
Gary F. Martel  
Chief, Fisheries Division

# **APPENDIX D**

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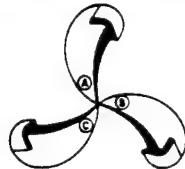
## **CHAIN-OF-CUSTODY FORMS**

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**AQUATIC  
SYSTEMS  
CORPORATION**



P.O. BOX 15390  
PITTSBURGH, PA 15237-0590  
FAX 412-766-7060  
412-367-1000

17 May 1995

Earth Tech  
1420 King Street  
Suite 600  
Alexandria, VA 22314

Attn: Mr. Kevin McCreanor

Subj: Shipment of Biota Samples to  
ESE Laboratory, Gainesville, FL  
Monday, May 15, 1995

Ref: Telephone Conversation  
May 15, 1995

Dear Mr. McCreanor:

This correspondence is to inform you that the biota samples collected at Woodbridge Research Facility in the fall of 1994 have been shipped to ESE Laboratory in Gainesville, Florida per your request. Six (6) coolers of biota samples (fish and mussels) were shipped overnight via Federal Express on May 15, 1995.

Enclosed please find a Copy of the Federal Express Airbill along with copies of the Chain-of-Custody forms which accompanied these biota samples.

If I can be of further assistance to you please do not hesitate to contact me.

Sincerely,

Gregory M. Styborski

GMS/gms

Enclosures

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**fedex.**

Federal Express

USE THIS AIRBILL FOR SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.  
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO AND ALL NON-U.S. LOCATIONS.  
QUESTIONS? CALL 800-238-5355 TOLL FREE.

**HIMBILL  
PACKAGE  
TRACKING NUMBER**
**3771763796****4319N**

SHIPPER'S FEDERAL EXPRESS ACCOUNT NUMBER

Date

**5-15-95****3771763796 (1 OF 6)****SENDER'S COPY**

From (Your Name) Please Print

Your Phone Number (Very Important)

To (Recipient's Name) Please Print

Recipient's Phone Number (Very Important)

**Gregory M. Styborski****412-367-1000****Mr. Dave Green****(904) 333-1601**

Company

Department/Floor No.

Company

Department/Floor

**AQUATIC SYSTEMS CORPORATION**

Street Address

**50 UNION AVE**

State

ZIP Required

City

State

ZIP Required

**PITTSBURGH****PA****15202****Gainesville****FL****32607**

OUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.)

PAYMENT 1  Bill Sender 2  Bill Recipient's FedEx Acct. No. 3  Bill 3rd Party FedEx Acct. No. 4  Bill Credit Card or L/C Acct. No.5  Cash/Cashier CheckAcc/Credit Card No. **1172-8374-1**

Exp Date

SERVICES  
(Check only one box)

Priority Overnight <small>(Delivery by next business day)</small>	Standard Overnight <small>(Delivery by next business day) For additional information see Service Guide</small>
<input checked="" type="checkbox"/> OTHER PACKAGING	<input type="checkbox"/> OTHER PACKAGING
<input type="checkbox"/> FEDEX LETTER	<input type="checkbox"/> FEDEX LETTER
<input type="checkbox"/> FEDEX PAK	<input type="checkbox"/> FEDEX PAK
<input type="checkbox"/> FEDEX BOX	<input type="checkbox"/> FEDEX BOX
<input type="checkbox"/> FEDEX TUBE	<input type="checkbox"/> FEDEX TUBE

Economy Two-Day <small>(Delivery by second business day)</small>	Government Overnight <small>(Fees paid for automated processing only)</small>
<input type="checkbox"/> ECONOMY*	<input type="checkbox"/> GOVT LETTER
<small>* Economy Letter Rate not included Minimum charge One pound Economy rate</small>	<input type="checkbox"/> GOVT PACKAGE

Freight Services <small>(For packages over 130 lbs.)</small>	Government Overnight <small>(Fees paid for automated processing only)</small>
<input type="checkbox"/> OVERNIGHT FREIGHT** <small>Confirmed reservation required Delivery commitment may be later in some areas.</small>	<input type="checkbox"/> TWO-DAY FREIGHT** <small>Declared Value Limit \$200 Call for delivery schedules</small>

**5 DELIVERY AND SPECIAL HANDLING**

(Check services required)

Weekday Service	<input type="checkbox"/> HOLD AT FEDEX LOCATION WEEKDAY <small>(Fill in Section H)</small>
	<input checked="" type="checkbox"/> DELIVER WEEKDAY
Saturday Service	<input type="checkbox"/> HOLD AT FEDEX LOCATION SATURDAY <small>(Fill in Section H)</small>
	<input type="checkbox"/> DELIVER SATURDAY <small>(Extra charge) Not available to all locations</small>
	<input type="checkbox"/> SATURDAY PICK-UP <small>(Extra charge)</small>

Special Handling	<input type="checkbox"/> DANGEROUS GOODS (Extra charge)
	<input type="checkbox"/> DRY ICE
	<small>Dangerous Goods Shipper's Declaration not required</small>
Dry Ice & MR W&S	<input type="checkbox"/> DESCRIPTION
	<input type="checkbox"/> HOLIDAY DELIVERY (If offered) <small>(Extra charge)</small>

**6 PACKAGES**

PACKAGES

**7 REBATE**

In Postage Only

8 YOUR DECLARED VALUE

\$100.00

**9 DIM SHIPMENT**

(Chargeable Weight)

10

11

12

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# CHAIN OF CUSTODY RECORD

ICF Karsner - Project No. 6622000500

PLANT CODE PROJECT NAME

Woodbridge Research Facility

SAMPLERS Styrborski, Kenderes, Long  
(Signature)

NUMBER  
OF  
CONTAINERS

STA. NO. DATE TIME STATION LOCATION

1 10/24/94 8:00 AM SEE START UP  
CONTROLS

2 10/24/94

3 10/24/94

4 10/24/94

5 10/25/94

REMARKS OR  
OBSERVATIONS

CONDUCTIVITY  
DH

WEEK 1  
WEEK 2  
WEEK 3  
WEEK 4  
WEEK 5  
WEEK 6  
WEEK 7  
WEEK 8



Relinquished by: (Signature) <i>Diane Wissbeck</i>	Date 10/25	Time 12:30	Received by: (Signature)	Date	Time	Received by: (Signature)	Chain of Custody Tag #	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Received by: (Signature)		
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Ice Chest Temp °C	Ice Chest #	Chain of Custody Tag #

DISTRIBUTION: Original accompanies shipment; Copy to Coordinator Field Files.

Please contact Diane Wissbeck or ICF Karsner  
For analytical methods 410-612-6361

PAGE \_\_\_\_ OF \_\_\_\_





**THE KAISER - BENNETT** : 66-220005cc  
**CHAIN OF CUSTODY RECORD**

TCF Kaiser - Project No. 6622000500

**PROJECT NAME** Woodside Research Facility

SAMPLERS OF CONTAINERS  
*(Signature)* *SYBORSKI, KENDERS, Long*

**REMARKS OR  
OBSERVATIONS**

CONDUCTIVITY  
OR

- Week 8
- Week 6
- Week 4
- Week 2

**PROJECT NAME** *Computer Based Test Facility*

~~RECORDED~~ ✓ ~~INDEXED~~ ✓ ~~SERIALIZED~~ ✓ ~~FILED~~ ✓

SAMPLES

Salaries and benefits

RECEIVED BY: [Signature] DATE: 11/15/95 R30

Volume 10(1)

Billing Address by: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: (Signature) \_\_\_\_\_

Billing Address by: (Signature) \_\_\_\_\_ Date \_\_\_\_\_ Received by: (Signature) \_\_\_\_\_

Requisitioned by: (Signature)

THE BOSTONIAN

THE BOSTONIAN

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Relinquished by: (Signature) \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Received for Laboratory by \_\_\_\_\_

Relinquished by: (Signature) \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Received for Laboratory by \_\_\_\_\_

Date      Time      Location

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ESTATE PLANNING: Advanced Estate Planning Techniques

*Die ersten beiden Absätze dieses Schriftstücks entnahmen ich aus dem "Gesamtkatalog der Sammlungen des Deutschen Museums zu Berlin".*

104

DISTRIBUTION: CHARTER MEMBER UNKNOWN; COPY IN CIRCUIT LIBRARY OF FIELD FILES.

**Please Contact Diane W. SBECK or TCF Kaiser**  
T-Administrative Methods 410-617-6361  
DISTRIBUTION: Original accompanied by printout; copy to Coordinator of Prod. Firms.

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11

**ICF Kaiser Project No. 6622000500**

**PROJECT NAME**

**WOODBRIDGE Resource Recovery**

**PLANT CODE**

**SAMPLERS  
(Signature)**

**NUMBER  
OF  
CONTAINERS**

**STA. NO.**

**DATE**

**TIME**

**CONTAINER**

**STATION LOCATION**

**REMARKS OR  
OBSERVATIONS**

**CONDUCTIVITY**  
**DH**

**TEMPERATURE**  
**80**

**PH**

**DO**

**TDS**

**EC**

**Salinity**

**Conductivity**

**CHAIN OF CUSTODY RECORD**

**Received by: (Signature)**

**Date**

**Time**

**Received by: (Signature)**

**Relinquished by: (Signature)**

